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WARRANTIES ON WEAPONS SYSTEMS

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WARRANTIES ON WEAPONS SYSTEMS

TUESDAY, FEBRUARY 28, 1984

U.S. SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

The committee met in open session pursuant to notice, at 10:04 a.m., in room SR-222, Russell Senate Office Building, Senator John Tower (chairman) presiding.

Present: Senators Tower, Thurmond, Goldwater, Warner, Quayle, Wilson, Nunn, Stennis, Exon, Levin, and Kennedy.

Staff present: James F. McGovern, staff director and chief counsel; Arnold L. Punaro, staff director for the minority; Alan R. Yuspeh, general counsel; Brenda K. Hudson, assistant chief clerk, L. Wayne Arny III, Drew A. Harker, George K. Johnson, Jr., James C. Smith III, David S. Lyles, professional staff members; Barbara B. Brown and Marie Chaillet, staff assistants.

Also present: Gerald J. Smith, assistant to Senator Goldwater; Ronald P. Kelly, assistant to Senator Humphrey; Jon Etherton, assistant to Senator Jepsen; Bernard R. Toon, assistant to Senator Quayle; John Roddy, assistant to Senator East; Mark J. Albrecht, assistant to Senator Wilson; Jeff Minsky, assistant to Senator Cohen; Les Brownlee, assistant to Senator Warner; Francis J. Sullivan and Mary A. Shields, assistants to Senator Stennis; Jeffrey B. Subko, assistant to Senator Exon; Gregory P. Craig and James Steinberg, assistants to Senator Kennedy; Charles C. Smith, Jr., assistant to Senator Dixon; Ralph White, assistant to Senator Levin; and John Metzger, assistant to Senator Andrews.

OPENING STATEMENT BY SENATOR JOHN TOWER, CHAIRMAN

Chairman TOWER. The committee will come to order.

The committee meets today to consider the issue of warranties on weapons systems. We are most pleased to have with us as our lead witness this morning, the distinguished Senator from North Dakota, Mark Andrews.

Senator Andrews, who is a member of the Defense Appropriations Subcommittee, authored a provision last year which was enacted as section 794 of the Department of Defense Appropriations Act for fiscal year 1984.

Senator Andrews' provision requires a guarantee from the manufacturer of a weapons system that the system will meet all of the Government's performance requirements, and that it is free of defects in workmanship and material upon delivery to the Government.

I believe that Senator Andrews deserves a great deal of credit for his attention to this matter and for encouraging us to look at the question of warranties on weapons systems which the Department of Defense purchases.

I would make only one comment before we hear from Senator Andrews this morning.

In order to place these hearings in perspective, members should distinguish between a warranty with respect to materials and workmanship and performance guarantee.

With respect to warranties, I am certain that all of us who are involved with national defense believe that the Government ought to ensure that defense contractors manufacture weapons systems to specifications, that the correct materials are used, and that the workmanship is properly done.

In other words, we are entitled to buy ships, aircraft, and tanks that are properly welded and properly bolted. I think there should be no dispute about that. Of course, the Defense Department has historically tried to ensure that weapons system warranties of this type are obtained.

The area of performance guarantees is a more complicated one, however. Often the Department itself controls aspects of the design of a weapons system.

If the Air Force controls some of the design of a new fighter, or if the Navy controls some of the design of a new submarine, then it seems that the Air Force or the Navy designers must accept the responsibility for whether or not these portions of the design will meet performance requirements.

There seems to me to be a great problem if we suddenly demand that defense contractors who have not designed a particular system stand as insurers that the Government's design will work.

I make this point initially because I think that our discussion here today will be more fruitful if we recognize that there is an important difference between a materials and workmanship warranty, which ensures the Government that a system is properly built to whatever design has been agreed upon, and a performance guarantee, which deals with whether or not the particular design will achieve its goals.

The Committee on Armed Services is conducting these hearings since the question of weapons system reliability and warranties is an oversight matter within the jurisdiction of the committee.

I do recognize that the Department of Defense has some concerns about specifics of the existing provision on warranties, and there is also some concern expressed by industry. It is our committee's responsibility to ascertain whether the present warranty law is the policy we should continue.

Without objection, I will insert into the record the text of section 794 of the Department of Defense Appropriations Act of 1984, the text of the proposed regulation issued by the Department of Defense implementing section 794, and the comments submitted to the Department of Defense on its proposed regulation.

I am incorporating this material into the record of these hearings in order to reflect the views of those who have commented in other forums on this matter.

[The text of section 794 of the Department of Defense Appropriations Act of 1984 and comments thereon appear in Appendix A, p. 155.]

Chairman TOWER. Also, the record of this hearing will be left open until Friday, March 2, at 5 p.m. for any further statements which interested parties would like to submit as part of the record. Questions by members of the committee seeking responses of witnesses for the record may be submitted until 5 p.m. today.

Senator Andrews, we are delighted to have you here today.

Before I call on you, let me defer to Senator Goldwater.

Senator GOLDWATER. Mr. Chairman, I recall when Senator Andrews first brought this up and discussed it with me. If I am not mistaken, I think I asked to be on the amendment.

Senator ANDREWS. As a matter of fact, you did, Senator.

Senator GOLDWATER. Since that time I have rethought my position and I find some problems with this amendment that I think will prove to be very dangerous and detrimental. I will cite an example.

We give a contract, say, to Rockwell to build a B–1. I don't know how many thousands of subcontractors there are. I think there are subcontractors in every State.

Now, for a major contractor to stand warranty for each subcontractor is almost an unworkable hardship.

If we, in turn, have to go to every subcontractor and demand a warranty from them, that presents an additional problem.

Now, if we are buying something like a Colt pistol for example, then there is no trouble with the warranty idea. What disturbs me, and I didn't think about it at the time which probably attests to the fact that we should have had hearings on it, is the very difficult position faced by the major contractor. He must live up to a warranty when he has literally thousands of subcontractors, any one of whom can make a defective part and it could fail and it's the responsibility of the major contractor to live up to the warranty.

Mr. Chairman, I look forward to these hearings. I hope that Senator Andrews, if he is pressed on the issue, will entertain suggestions to modify or change the amendment so that it can be workable.

I want to apologize for not having enough sense to have realized these problems before I cosponsored the amendment. I still think the idea is good if we can make it work.

Chairman TOWER. Senator Andrews, you may read your statement in its entirety, you may summarize it or you may proceed in any way you see fit.

Any additional material you wish to incorporate in the record will be accepted.

STATEMENT OF HON. MARK ANDREWS, A U.S. SENATOR FROM THE STATE OF NORTH DAKOTA

Senator ANDREWS. Thank you, Mr. Chairman. I will do that.

I appreciate the statement, both by you and by my friend, the Senator from Arizona.

Let me point out to my friend, Senator Goldwater, that I will touch on his concern as the Senator, as usual, exhibited his great good sense in cosponsoring the amendment, because the amendment does not do violence to the questions the Senator raised.

As a matter of fact, the argument that it does is one of the red herrings that has been dragged across the track of this warranty law that makes absolutely no sense whatsoever.

Mr. Chairman, I appreciate your inviting me to testify before this committee on the subject of our law requiring warranties.

Twenty-three years ago, Mr. Chairman, Dwight D. Eisenhower made his farewell address to this Nation. No other President in the Nation's history, including Washington, so shrewdly and decisively warned the Nation of a future danger—the extremism of a national defense policy, based almost totally on principles and policies determined, yes, dictated, by a military-industrial complex.

In today's BNA daily report we see again Mr. Gordon from the Defense Department being quoted in a meeting that he has had with the contractors and saying that one objective his boss, Mary Ann Gilleece, Deputy Under Secretary of Defense, has is to improve relations between Government and industry in a way that is constructive to both.

Mr. Chairman, I contend that the principal purpose of warranties is to get this incestuous relationship between Government and industry away and start having them work for the taxpayers and for the defense of the freedom of our country. That is what we are talking about.

Let me quote from Eisenhower's speech:

> In the councils of Government, we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex. The potential for the disastrous rise of misplaced power exists and will persist.
>
> We must never let the weight of this combination endanger our liberties or democratic process. Only an alert and knowledgeable citizenry can compel the proper meshing of the huge industrial and military machinery of defense with our peaceful methods and goals so that security and liberty may prosper together.

Mr. Chairman, this is not a statement from somebody who is antidefense. This is a statement from one of the great military leaders of our country.

Mr. Chairman, might I also point out that I think my voting record in some 20 years of serving in this Congress would indicate that I have been as good a supporter of our defense establishment as any other member who has come down the pike.

Twenty-three years is a long time, Mr. Chairman. We've heard and been concerned about the stories of shoddy workmanship and cost overruns on weapons systems. They are a matter of well-documented public record.

For months now, our colleagues have been rising and pointing with concern, as new examples come to light. Frankly, people back home want us to do much more than just generate headlines by condemning these mistakes, Mr. Chairman, and that is why we passed into law the requirement for warranties on weapons systems.

I believe strongly that warranties represent the first concrete attempt at systematic reform in the manufacture and procurement of military weapons in our history as a modern Nation.

Congress has addressed this problem by taking a page from the private sector's way of doing business: Assuring quality and performance in products through written guarantees. There is no magic about it, it works. The tragedy is that we didn't adopt it a decade or more ago.

Mr. Chairman, warranties have existed in the private sector for decades. There are warranties in contracts for commercial aircraft, communications satellites, and orbiters for the space shuttle program, as well as everything from tractors to toasters. In the military sector, manufacturers in Western Europe warranty such high technology weapons as short- and long-range air defense systems for their country's defense and NATO forces.

As I'm sure you know, Mr. Chairman, the Air Force recently made a decision regarding future purchases of derivative fighter engines. According to Secretary of the Air Force, Verne Orr, these engines' costs will be reduced by savings of $2 billion to $3 billion because of our congressionally imposed warranties.

There was a predecessor to the present law on all weapons systems. That is one we authorized 1½ or 2 years ago requiring warranties to see how it would work, Mr. Chairman, on these engine contracts.

Various contractors appeared before our committee in the typical dog and pony show with the Air Force talking about how theirs was the best engine.

I asked the questions that most anybody would ask, "How do you know it is the best engine? What kind of warranty do you give?"

Of course, the answer was they don't give a warranty. We wrote in the law 1½ or 2 years ago on this warranty requirement and by the Air Force's definition alone, not mine, the Air Force's definition, it has saved our taxpayers $2 to $3 billion over the length of those contracts.

Not only that, Mr. Chairman, it has given us engines that the Air Force say will work a whale of a lot better because of the warranty.

Secretary Orr went on to say the warranty requirement was a key element in a successful competition.

The required use of warranties on military equipment has been gradual. We directed it 2 years ago on fighter engines, and we found that it is an acknowledged success. The focus of discussion now should be on how best to implement last year's law requiring warranties on all weapons systems.

I understand, Mr. Chairman, that the Defense Department plans to implement the language by reviewing warranties for weapons systems on a case-by-case basis. This is certainly acceptable.

This is totally in line with what we proposed and intended when we wrote that law.

Actually weapons are totally different, one from the other. A warranty on one, Mr. Chairman, will be understandably quite different from a warranty on the other. That is why the law states that we leave up to the Defense Department the specifics of each warranty on each weapon system.

We hope they can do it on a case-by-case basis. The warranty requirement does not apply to funds obligated or expended prior to

the enactment of this law. So, there is no going back and picking out a contract already negotiated.

It does apply to any production contract where money will be obligated or extended after December 1983. The language requires manufacturers of subassemblies, I might point out to my colleague from Arizona, to warranty their components to the prime contractor who passes this warranty on to the Government.

This passing on of separate warranties by the assembling contractor is precisely what occurs in civilian practice, where my tractor is purchased with separate warranties from the engine manufacturer, from the transmission manufacturer and with an overall warranty on the chassis by the manufacturer of the tractor itself.

If I have some problems with the engine, I go back to the manufacturer of the engine and exercise his warranty.

Clearly, Mr. Chairman, assembling contractors, whether they are shipbuilders or tank manufacturers or airplane manufacturers, will pass on to the Government separate warranties they get, just as Boeing now does to Pan American Airlines when it provides a new 747.

In fact, after I heard the testimony of the various engine manufacturers in the Air Force, I picked up the phone and called an old friend of mine, who has been with Northwest Airlines for 30 or 35 years.

"When you buy an airplane, do you get a warranty on the engine only?"

"You bet, Mark. My Board of Directors insist I get a warranty."

"What if it is a new engine, one you don't have experience with, one that is state of the art?"

He said, "That is the one I need the warranty on even more."

Of course, I have talked to him since about the old red herring business of how do you pass on warranties.

He says, "Boeing passes on to us not only the warranties on the engine, but the warranties on the electronic equipment and Boeing quite properly warrants the fuselage which they make."

It has worked that way in the civilian sector for years.

In the case of the shipbuilder who mounts Government-furnished equipment on a destroyer, the warranty responsibility goes back to whoever assembled it for the Government in the first place.

Mr. Chairman, it is also important to realize that our statutory language gives the Defense Department two very specific waivers that totally negate their protests of being straitjacketed by the Congress.

First the language allows waivers on warranties on the grounds of national security.

And second, on the grounds of cost effectiveness.

DOD must, of course, justify before the Appropriations and Authorizing Committees the use of these waivers. The taxpayers' right to see their tax dollars wisely spent is thus protected by the justification process and the ability of the committees to hold hearings and reject, if necessary, any waived warranty.

The Pentagon's protests over the warranty requirement are a smokescreen covering its refusal to go along, as I said, with the first systemic reform in the past 30 years.

Besides having these two specific waivers, the law provides two-tiered protection to the Nation.

First, it provides protection to the taxpayers, assuring them that their tax dollars will be wisely spent on weapons systems giving them a dollar's value for a dollar expended.

Mr. Chairman, I understand turf territory that exists in Congress. If I have learned nothing else in the last 20 years I have served in these bodies, it has been that there is the question of turf.

I would suggest, Mr. Chairman, that the question of turf, our responsibility on the Appropriations Committee on which my friend, the Senator from Mississippi sits, is specific to getting the wise expenditure of tax dollars.

Now, there is a second protection and that is the protection for our service personnel who serve on the front lines of our Nation's defense.

We want to assure them that they will be using weapons whose reliability and performance is now guaranteed in writing by the manufacturer. That is the specific responsibility of the authorizing committee, that these weapon systems do in fact work.

It goes without saying, Mr. Chairman, that there is a great need to require that weapons will work when needed. Our law takes a constructive and responsible step to the all too frequent reports about defective military equipment and will serve our Nation well in the protection of our freedom.

Mr. Chairman, Senator Tower pointed out about designers accepting responsibility, the fact that the manufacturer of one of these weapons should not be forced to warranty something that was designed by the Defense Department.

Mr. Chairman, long overdue has been the opportunity to pull into this whole working relationship the expertise that exists in the private sector.

Think of the C–5. You and I, Senator Stennis, had to appropriate $1.4 billion to fix those wobbly wings that cracked. Maybe this is an oversimplified case. But somebody in the Pentagon picked up the phone and called Lockheed and said, "We want to take some weight out," and they did.

They took weight out of that spar and they lightened it up. If they had had a warranty, I bet you any amount of money the Lockheed engineers would have said, "No way will we lighten up this spar."

But they didn't get the input of the Lockheed engineers. Lockheed, as any other defense contractor under this incestuous relationship, saluted and said, "Yes, sir, we will weaken the spar and take out the weight," and down the line you and I, taxpayers, paid $1.4 billion for a fix that would not have had to happen if it had not been for this business of not having any type of warranty relationship.

The same thing happened, I am told, by a friend in the Air Force who called me. He is one of your four-star generals, and I probably should not use his name, but I knew him back at the Military Academy and he is in a top spot. He pointed out not only the C–5, but the B–47, way back to that bird when they wanted to lighten it up, Boeing milled out some of the aluminum on that main spar and it failed, I am told.

Who paid for the cost overrun? You and I.

A warranty system, Mr. Chairman, can eliminate a lot of that by bringing out the best in our civilian side, our business sector, and tying it in with the Pentagon.

It answers specifically the chairman's point of how can we expect manufacturers to go along with the single-minded edict of the designer over whom they have no responsibility.

I think it is about time we coupled some of the design and manufacturing technique ability in private industry and let it, in effect, have some counterbalancing to some of the things that we have seen happen over the last 30 years.

The reason for this law, Mr. Chairman, might I stress again, is that I am darn sick and tired of all of our colleagues on both sides of the aisle who find fault and point the finger and raise heck. I think it is about time we try to make the system work better.

I think this is one way of solving one of the major problems that has come up. I am glad it is law. I would hope that the Pentagon will see that it is implemented properly so that it does in fact work.

Mr. Chairman, I appreciate very much your giving me this time to testify on this law.

Chairman TOWER. Thank you, Senator.

Let me note that I think there is some difference in warranty on, say, a tractor, automobile and electrical appliance where the specifics are dictated by the manufacturer himself, where the performance and standards are set by the manufacturer, himself, and a military hardware system where the specifics in this instance are provided by the consumer and the design is provided by the consumer.

I just would like to ask you if you think it is reasonable policy to require the manufacturer of a weapon system, when the manufacturer does not control the design of the system, to guarantee that the design will achieve performance goals?

Senator ANDREWS. Yes. Mr. Chairman, I covered that partially a moment ago. I think what we need, as I said a moment ago, is to call into the act the ability of the designers and engineers that the contractor has as well.

I pointed out the C–5 and used it as an example, Mr. Chairman, where the Defense Department called and because their designers had precedence, the Defense Department was able to tell Lockheed to lighten up that plane, take some weight out of the main spar, and they did.

It cost us $1.4 billion to make the fix because they lightened it up too much. Had they been under warranty, Mr. Chairman, as they are for any airplane they sell in the civilian market, I am confident that the Lockheed engineers would have told the Pentagon engineers, "You are off your rocker. This is a damn fool step you are taking, it is not going to work," and they wouldn't have done it and we would have had dependable planes on the flight line when first delivered and we would have saved $1.4 billion.

I think, Mr. Chairman, one of the strengths of this warranty law is the fact that it does call into play responsibility and the judgment of the engineering team in private industry. I think that is

one of the strong points of it, not something that would be considered as something wrong with it.

Chairman TOWER. The fact is if you are going to require warranty on performance wouldn't it be reasonable for the contractor to insist that he have control of the maintenance of the system and be the sole purveyor of spare parts?

Are you concerned that this section 794 will increase the leverage of major defense contractors in insisting that they supply spare parts and provide maintenance, thus limiting the competitive opportunity for smaller businesses?

Senator ANDREWS. Again, let me quote Secretary of the Air Force, Verne Orr, who said the fact they had a warranty allowed the competition for fighter engines to succeed because of the warranty.

Every bidder has to live up to the same warranty and that makes for a more competitive situation. I would think that instead of cutting back on the warranty requirement because of competitiveness, we would say this is far better.

There is no mention anywhere in the law saying the Pentagon must accept spare parts support and maintenance from the prime contractor to warranty the weapon.

If you buy a Chevrolet automobile, you don't have to buy parts from Chevrolet. You can get a warranty anyplace in the country. If the original part goes haywire, you get the warranty on it.

I don't think it is that much different from what one of our great airlines gets when they buy a plane from Boeing. It is warranted that it is going to work, and it does. They do the maintenance on it; Boeing doesn't, Mr. Chairman.

Chairman TOWER. Secretary Orr also testified that really the primary factor in reducing the cost of the engines was competition rather than warranty.

He further stated he had been in the automobile business for 15 years and that he knew that the cost of the warranty or the anticipated cost to the manufacturer of the warranty was also included in the price of the automobile.

He seemed to be of the opinion that following too strict a warranty procedure would result in much higher cost to these systems.

Do you have any comment on that?

Senator ANDREWS. Sure, Mr. Chairman.

The only way that statement is valid is if they maintain that we are buying weapons that cost $10 million a copy that aren't going to work.

If we buy weapons that are going to work, then we have to pay $10.1 million for them.

I don't know if you are going to have to pay extra for ones that work instead of for the ones that don't work.

Given the quotas I see in national news about sloppy tendencies on the production lines and weapons that don't work up to expectation, and these quotes are from members of the Defense establishment, I would rather pay more for a weapon to the guy that says it will work than pay through the nose to the fellow who made it and says he has no confidence in it.

Chairman TOWER. I think we have to make a distinction. None of us has any quarrel with the idea that materials and workmanship should be warranted.

I think the question is one of performance, a performance guarantee. That is what gets me concerned. There are some comments we have gotten to section 794 that the performance guarantees required by that section will retard efforts to push technical limits, that the effect of the provision will be to encourage contractors to look for safe solutions to the problems.

What are your comments on that?

Senator ANDREWS. Mr. Chairman, again if you design requirements for a weapon or requirements for a tractor or requirements for whatever else and you tell the person who is going to sell it to you that you want those, that is what you are going to get.

If the designer in the company making it doesn't do the things that will make that product live up to the customer's expectation, he doesn't get the next order.

Again, I think one of the things that we have to count on in implementing warranties in this, as I pointed out before, the first systemic reform in Defense Department procurement systems in 30 years, is to begin to rely a little bit more on the engineering capability in the private sector of this country instead of having a group of half-baked ideas.

Sometimes they are great ideas, but all too often, Mr. Chairman, they are half baked by a group of people in the Pentagon who want every bell and every whistle they can get on every weapon. Sometimes they simply don't work.

Out in the industry, and I have spent a good deal of time in the last 2 years, Mr. Chairman, in the plants of the major defense contractors of this country, they have a saying that if you push them beyond the knee of the curve to put that last whistle on, you get lousy performances.

If we are thinking about the man out in the field that has to fight with this weapon and make it work, that weapon's performance is extremely important.

Chairman TOWER. I think it is extremely important, too, but the fact is those who operate the systems, who use the systems, have rather significant input into the design of the systems.

This is a unique situation that doesn't really so much apply to the private sector because the consumer does not design an automobile or provide the specifications for it or set the performance standards. They are set by the manufacturer.

Now, in reviewing the comments that were received by DOD on the regulations, it is obvious that this is a very, very complex issue.

Now, our job in the Congress, as I see it, is to set general policy, not to get in the business of micromanagement. If we get down into the business of micromanagement of the Department of Defense, 535 of us acting as a committee to make these decisions, I think we are going to get into some difficulties.

Don't you think it would be advisable, if it appears to be necessary, to restructure section 794, to tailor the regulation to the Department of Defense to implement to the maximum practicable extent the policies that underlie your amendment rather than try to specify the precise type of warranty to be obtained?

Senator ANDREWS. Mr. Chairman, we don't specify in the statute the precise type of warranty that has to be obtained. We have teeth in it.

We say they have to come up with a warranty. That is what they are objecting to, but they are subject to the review process.

If the warranties aren't adequate, of course our committees will be the ones to react as to the adequacy of those warranties.

Let me also point out, Mr. Chairman, that warranties will broaden the base of competition in technological invention, innovation, development, engineering and quality production. Warranties today exist, Mr. Chairman, on some of the most advanced technological systems.

Commercial Communications Satellite Corp. Here is one from National Aeronautics and Space Administration, NASA, the safety, reliability, maintainability and quality provisions for the space shuttle program. The launching of a couple of satellites didn't live up to form, but I think NASA has done a fantastic job over the years in quality control and the manufacturers give warranties, both to NASA and to the communications satellites.

Mr. Chairman, you don't want to put all this warranty language in that record. It would make the record entirely too voluminous, but these data are available to your committee and they are available to the Senators who sit on your committee and show that warranties work quite well in extremely advanced, extremely sophisticated procurement contracts.

Chairman TOWER. Senator, I have some additional questions that I would like to submit to you for response in writing. If you will be good enough to accommodate me on that, I would be grateful.

My other colleagues may have some questions as well.

Senator ANDREWS. I understand. We will be glad to work with you on that.

Chairman TOWER. Senator Stennis?

Senator STENNIS. I will pass for the time being. Thank you.

Chairman TOWER. Senator Levin?

Senator LEVIN. Thank you, Mr. Chairman.

Let me commend Senator Andrews on the leadership which he is showing in a very critical area. There is indeed a need for systemic reform of the procurement system.

Many of us have been involved in various pieces of that reform and your leadership in this particular aspect of the procurement system is critical and I think it is going to push us in the right direction. At least I hope it does because we obviously can do better in terms of what systems perform well and we have not had the kind of success that we should have in this area.

I do have a couple of questions.

WORKMANSHIP VERSUS DESIGN WARRANTY

Do you see any difference at all in the kind of warranty which should be required relative to the design of a system and relative to the performance of a system, when the performance falls down based on bad design in which we participated compared to workmanship and material failures?

Senator ANDREWS. Quite possibly, but, here again, the differing degrees of responsibility against workmanship versus design would be spelled out in the type of contract the Pentagon negotiates on that particular weapon.

I hope that we are not too lenient on design problems because, as I pointed out earlier, it would be my hope that the engineers in the private sector would be pulled into this act to review the design that comes from the Pentagon and that they would serve as a very effective balance to some of the patently ridiculous designs that have come out that simply haven't worked and haven't worked at great cost to the taxpayer and very great frustration to the armed services.

Senator LEVIN. I did hear that testimony and I think you made a strong case why we ought to involve the engineers in the private sector and try to increase the responsibility and accountability that does exist in that area.

At least in terms of what warranty ultimately you would negotiate, you would then allow for a different kind of warranty where there had been significant participation by the Defense Department in the design of something than you would where there are problems with workmanship and material?

Senator ANDREWS. Quite possibly, yes.

Again, Senator, let me say this.

If the Air Force wants a fighter plane that will go mach 2.3 and they submit the design to the industry and the industry takes a look at it and begins building the plane according to the specs and the industry itself knows that it won't go at that specified speed, isn't it incumbent and extremely important for us to make sure that the industry then speaks up if this design isn't going to meet the specs it is designed to meet?

Senator LEVIN. I would like to see that. I also would like to see some differentiation where the Pentagon then says, after hearing from the industry designer, "We have heard what you say, you are saying it is going to go 2.2. We think it is going to go 2.3. We want to keep on this course," at that point, having heard from the contractor or the industry and taking that into consideration, someone has to make a judgment.

If we are going to give the Pentagon the right to participate and a final say on the design and the Pentagon says, "Look, in our judgment it is going to make it, we have decided after considering what you have to say, we want to go with these original specs and not modify them," I would think at that point we don't want to say that the industry is going to have to produce the exact same warranty that they do on materials and workmanship.

Senator ANDREWS. Not at all. I think, Senator, a lot of that can be taken care of by differentiating between the test model and a production run.

Obviously, the warranty on a production run weapon would be negotiated after you have tested the prototype.

There is nothing that would cause a warranty to be negotiated in that tight a fashion for a prototype. You put one or two test planes up or you put one or two test tanks out or some type of rockets out and you test it.

Then as you observe the test and the response of the test weapon that has been designed to the military specifications, you enter into the warranty for the production contract.

It is the production contract that is the major thrust of this legislation.

Senator LEVIN. Again, and I don't want to press you too hard if you have already answered the question, the short answer, as I understand it, is that you would allow for flexibility to differentiate in the warranties that are required and negotiated in those two areas, at least in some stages of the contract?

Senator ANDREWS. Section 794 allows a great deal of flexibility to the Defense Department.

Senator LEVIN. I think there would have to be that kind of flexibility. I may not agree with the short differential that the chairman points out.

It seems to me there is some difference between requiring warranties on performance where the Government is deeply involved in design, and the problem of design, and on workmanship and material.

I am glad to hear that you basically agree that at least there is flexibility and that that could be reflected.

PASSING WARRANTY TO SUBCONTRACTORS

Second, as perhaps a technical question relative to the parts of warranties that would continue with the parts, you indicated that it would be all right for the manufacturer to pass along the warranties to the sub?

Senator ANDREWS. Certainly it is always done in the civilian sector. I don't see why it should not be done in the military sector.

Senator LEVIN. Would that be it or would we also require from the manufacturer his own warranty as well as passing along to the subcontractor?

Senator ANDREWS. I don't know why you would need a more restrictive warranty on component parts than you have on the civilian side.

Senator LEVIN. For instance, there may not be financial responsibility necessary. We don't know the financial responsibility of every subcontractor that a major contractor deals with. We presumably do know that person's financial responsibility.

Senator ANDREWS. Not being a lawyer myself, Senator——

Senator LEVIN. Count that among your pluses, by the way.

Senator ANDREWS. When we wrote this legislation which is now law, we anticipated the details would be worked out by the Pentagon on a weapon-by-weapon basis, subject to the overview of the authorizing committee and the Appropriations Committee.

If we don't like what they come up with, we can fine-tune it more. We put specifics into the warranty 2 years ago on fighter engines. We spelled out 3,000 tactical cycles because we thought that was an achievable goal, but we didn't put that kind of specifics into this other legislation because, obviously, this should be negotiated on a weapon-by-weapon basis.

Senator LEVIN. Just one additional question.

WHY A NEED FOR WARRANTIES?

Why is there need for warranties, in your opinion, given the test and performance evaluations which are performed on weapon systems today?

Senator ANDREWS. Solely because of the problems that we have had. We have had test and performance down the line. We have had problems with the M-1 tanks. We have had problems with engines. We have had problems with a whole host of things.

I don't know of any better way of doing it than to do it through warranties because things seem to get a little skewed down the line.

Again, the example of the C-5, the $1.4 billion to refit that entire fleet. Tests and performance evaluations also, Senator, are not completed on a large number of our weapons.

A GAO report that was released in June 1983 showed $33 billion worth of weapons without adequate tests. This concerns me. I think that we might force this kind of testing into being if we had a warranty requirement once the weapon goes into production.

Senator LEVIN. Mr. Chairman, I want to again commend Senator Andrews. I think every taxpayer in this country is in his debt for pushing this issue and getting involved in it to the extent he has.

I hope he can continue to make some progress with it.

Senator ANDREWS. It is in the law if nobody messes it up.

Senator LEVIN. I know it is in the law. I mean in terms of permanent law.

Senator ANDREWS. It is permanent. In the 20 years I have been on the Appropriations Committee, Senator, might I assure you that I have learned how you make riders on appropriations bills permament law and I think that is the thing that is shaking up the Defense Department.

But this is permanent law. Unless the Congress amends it, it has to be lived up to.

Senator LEVIN. Thank you, Mr. Chairman.

Chairman TOWER. Gentleman, let me remind you that we have other witnesses from the Department of Defense. I would advise you to keep your questions as concise and as few in number as possible to Senator Andrews so that we can hear from other witnesses.

Senator Thurmond?

Senator THURMOND. Thank you, Mr. Chairman.

I want to commend Senator Andrews for his interest in this important subject.

I have to open the Senate in 2 minutes, so I will defer my questions to be asked other witnesses until later.

We thank you for coming before us and raising these points. It is a very complex matter. I am hoping something can be worked out that will be beneficial along the lines that you have recommended.

Senator ANDREWS. Thank you, Senator.

Chairman TOWER. Senator Nunn?

Senator NUNN. Mr. Chairman, I will defer questions until later.

I join my colleagues in congratulating Senator Andrews for his leadership in this area. I think there are questions raised that we need to look at.

I had not been able to get here earlier. I will defer questions to later.

Chairman TOWER. Senator Goldwater?

Senator GOLDWATER. I, too, would like to commend Senator Andrews for attempting to get something done. I think there are some things that have to be done that are not incorporated in the law.

For example, you mentioned the C–5. There is not a man on duty today that was here when the C–5 was thought up. One direction we should point our fingers at and attempt to solve is to make it possible for the men in uniform to spend more time on their assignments in the Pentagon.

I see no sense in assigning a man to Air Force Systems Command or to Research and Development emanating out of the Pentagon and have him there for 3 years, either retiring him or sending him back to a staff job.

I think it ought to become part of his military life and it might require his being there 10 to 15 years. I think we would be money ahead.

Now, on the C–5, I talked to Kelly Johnson about this. Kelly is one of the greatest aircraft designers in the world, he works for Lockheed. He had nothing to do with the C–5. It did not go through the so-called skunk works.

I believe what actually happened is that the Air Force felt a need for a very, very heavy lift airplane and they more or less picked out a Lockheed design, the C–130, and Lockheed said if it works on this airplane, it will work on a heavy lift. I believe that was the start of the trouble.

Nobody in the Pentagon had any control over that. Nobody in Lockheed really knew enough to say whether the wing root system of a former transport would work on these big wings and that heavy lift.

So, we wound up with an airplane that didn't have enough thought at the Pentagon level before the concept was turned over to Lockheed for refined engineering and construction.

I offer that to cite the reason for argument for longer service of men who design or propose this type of aircraft.

Another thing that we didn't incorporate in your amendment, and I don't know if it can be or not, but it is something to think about, is the parochial attitude of Members of Congress toward weapon systems.

I cite you the A–10 which my Subcommittee on Tactical Warfare did not put in for purchase 2 or 3 years ago. Lo and behold, a Congressman in the House put it in because it was made in his district, and the Air Force did not want the airplane. Yet an attempt was made for parochial reasons to get that back in.

I cite these things as cases to prove what you are trying to do probably does not go far enough.

I don't think anybody is on duty today who was here when the M–1 tank was first dreamed up, which was about 20 years ago. We have had nothing but a continuation of mistakes on that tank. The engines are only now beginning to work. Only a few weeks ago did we get a letter certifying that the engine had passed the 4,000-mile mark.

Now, if you and I had an automobile that would only go 4,000 miles, we would think it was a hell of automobile.

Senator ANDREWS. You will be glad to know they are beginning to get a warranty on that engine.

Senator GOLDWATER. Yes, but it was a long time coming.

Senator ANDREWS. That is right.

Senator GOLDWATER. I merely cite these things to you, Senator, to show that you have only lifted the corner of the sheet and if we can solve this problem that bothers me about the thousands of subwarranties that would be needed for such complex equipment, such as tanks, ships, aircraft, et cetera, I would be relieved to the point that I could fully support this.

We talk about fighter aircraft. Those are mostly designed by the fighter manufacturers and they work, they always work. I am afraid if the Pentagon had a hand in it, they might not work.

Now, one of the biggest problems we have with the Pentagon, and again this applies to what you are trying to do, you name a weapon system that anybody started that the Pentagon is not constantly adding to.

Senator ANDREWS. That is right.

Senator GOLDWATER. Just a few days ago they announced that the F-15, probably one of the best high altitude interceptors we have ever built, has now joined the ranks of every other good interceptor we have ever built, it is everything but a tanker.

Someday the Air Force is going to build an interceptor aircraft and that, by God, is what it is going to be. I hope I am around when that happens.

I merely mention these things, Mr. Chairman, because they are things on my mind, they are things that have been bothering me ever since I have been here.

I don't think the amendment that the Senator wisely put in applies to them. I hope that he is willing to explore these needed changes for those of us who feel very deeply about it.

Senator ANDREWS. I share your concern, Senator. I appreciate those comments.

No one recognizes better than I do that the warranty amendment is but the first step toward the systemic reform we need to make things work better. You and I come at this from the same side.

We think we need a strong defense. I think this is one of the best ways we can get it by taking the best out of private enterprise and combining it with the tendency of the Pentagon to go overboard on some of their weapon specs.

I think the component warranties from the various subcontractors can function exactly the same way in the Pentagon as it does in private industry.

It would be my hope that instead of holding these star chamber sessions with industry reps in an attempt to get them to come up on the Hill, Mr. Chairman, and gin up opposition to this law in the inimitable way they have been doing it in the last few months—in fact, Senator Goldwater, back in the cattle country, we call those unbranded calves "slicks"—we have seen a lot of slicks around the Hill lately. All the industry reps, you know, passing out why the warranty law won't work on plain white sheets of paper.

It is amazing. There is no letterhead at the top, no signature at the bottom, but there is a whale of a lot of stuff in the middle about why it won't work.

If they are so sure it won't work, why don't they put their name to it?

What we are trying to do is to get this thing to work better. We need the best thoughts, ideas and suggestions from everybody. This warranty law is but a first step. It does have teeth in it.

It is permanent legislation, but it defers, as it ought to, to the contracting authorities in the Pentagon to devise the separate warranties for each separate weapon since each one has different performance characteristics and each warranty should be a little different.

No one knows better than I do that there will be a lot of problems down the line while this massive shift begins to take over. Your committee is going to be in the middle of it because you are going to be contacted by the Defense Department as to waivers that under the warranty provision the Defense Department feels they have to give.

You are going to be asked to comment and that is good.

Senator GOLDWATER. I hope I do hear from them. I have not been besieged yet. Perhaps I will be.

As I say, the only thing that disturbs me is the requirement placed on the chief contractor to be responsible for the hundreds of thousands of subcontractors that he deals with.

As I say, I hope that the Pentagon can get their act straightened out because on a Tuesday morning a week or so ago they had a briefing in the Pentagon and said they were going to do everything they could to repeal the law.

On Wednesday Weinberger appeared before our Budget Committee. I asked him about it.

He said, "No, we are going to make it work."

I asked him about the repealer. He seemed not to know anything about it.

Thursday morning the Defense Department had another of their press briefings and said they would do everything they could to repeal it.

On Friday, Secretary Weinberger called me and said, "This is not the way it is. We are going to try to make this warranty work."

It is off and on, in again and out again. Hopefully they will get their act together and realize not just the thousands who are worried about the money cost, but those who worry about the basic freedom of this country, want weapon systems to be effective and that do work.

This is the best suggestion I have seen. If they have a better one, we sure would like to hear from them.

Senator GOLDWATER. The best part is if they work.

Senator ANDREWS. That is right. If they don't work, they are not worth a damn.

Senator GOLDWATER. I know my time is up, but I want to tell you something that Admiral Rickover told me one morning. I look upon him as one of the great engineers that we have had.

I said to him,

What happens when you wake up at 5 o'clock in the morning and you have a hell of an idea and you grab the pad by your bed and you sketch it out and you start it up? How long is it before that device is completed?

He said,

It will never be completed because there are 27 bosses above me on the chart and someplace along there some civilian is going to knock it down.

[Related material submitted by Senator Barry Goldwater follows:]

CONCERNS EXPRESSED BY INDUSTRY REGARDING THE PROPOSED AMENDMENT RELATING TO THE WARRANTY OF WEAPON SYSTEMS BY THE SUPPLIERS OF SUCH SYSTEMS

1. The legislation forces a warranty that is totally impractical in light of the government retention of design control, change control, and operational control.
2. The current legislation requires an open-ended total performance contractor guarantee for every weapon system and component that goes far beyond commercial practice.
3. The Amendment would force contractors to pursue the least risky technical course and thus would inhibit the innovation necessary for military technological superiority.
4. Section 794 would reduce competition, at both the prime and subcontract levels.
5. Many subcontractors will refuse or be unable to accept the weapon system performance guarantee flowed down from the prime contractor.
6. Section 794 would escalate the cost of system and component acquisition.
7. Section 794 will produce protracted litigation.
8. The availability of the waiver provision on cost effectiveness as a management tool of DOD is ineffective.

SECTION 794—GUARANTEE PROVISION IN FY '84 DOD APPROPRIATION ACT

The legislation forces a warranty that is totally impractical in light of the government retention of design control, change control, and operational control. In weapon systems, the Department of Defense controls the design, requirements, development, testing, and performance characteristics. The DOD normally sets performance needs at or beyond the state-of-the-art, and restricts development and testing to available funds. A contractor will not guarantee the performance of a system over which he has little or no control. This is to contrast with a commercial contractor who offers a limited warranty on a product where he has had total control of the design, development, testing, and operational parameters. The DOD should have the option of choosing a warranty or choosing to have full or substantial design and operational control, but it cannot have both choices.

The current legislation requires an open-ended total performance contractor guarantee for every weapon system and component that goes far beyond commercial practice. This goes far beyond commercial practice and reverses warranty practice in effect since the inception of DOD procurement regulations. Commercial practice calls for only limited warranties since experience has shown that such warranties are the most feasible from a risk and cost tradeoff.

The Amendment would force contractors to pursue the least risky technical course and thus would inhibit the innovation necessary for military technological superiority. In the face of quantitative weapon system inferiority to the Soviet bloc, our Nation's only edge is technological superiority. This thin edge will fast be eroded if prime contractors are required by law to give an unlimited warranty on the performance of their systems. They will not push the "state-of-the-art" but will design and build to the most proven, fail-safe standard. To innovate in the face of the required absolute warranty would expose contractors to such enormous financial risk that they could not rationally choose that course. Contractors will tend to offer military products designed and built around fully tested mature technology.

Section 794 would reduce competition, at both the prime and subcontract levels. For instance, warranting performance of weapon systems without benefit of adequate production experience would reduce competition in the following ways:

Firms would refuse to bid because this lack of production experience would force them into an unacceptably high risk position.

Firms may decide to bid, but quote very high prices to cover the warranty which significantly diminishes the benefits of competition.

The advantages of technical competition would be greatly reduced since bidders would be unwilling to offer other than the safest technical proposal.

The above points would apply to an even greater degree to subcontractors, as they are less able to accept technical and cost risks than prime contractors.

Many subcontractors will refuse or be unable to accept the weapon system performance guarantee flowed down from the prime contractor. Prime contractors will have no choice from the standpoint of self protection but to flow down to subcontractors and suppliers the full impact of the warranty. Warranty periods will be lengthened to cover procurement lead times plus the prime contractors' warranty period. This also expands the subcontractors' liability exposure and requires pricing increases. From the standpoint of a supplier, the liability exposure incident to a system failure caused by a supplier produced component could be ruinous. Prime contractors will have no choice but to refuse to buy from suppliers who do not have the financial resources to respond to a warranty claim for a system failure. When a subcontractor is unable to accept such a warranty, the prime will be forced to assume this workload thereby reducing our national industrial base, injuring small business opportunities, and further reducing competition.

Section 794 would escalate the cost of system and component acquisition as follows:

Competition is substantially reduced at the prime and subcontractor level.

System development and production cycles are stretched out.

Contractors are forced to include cost contingencies in their prices due to the open-ended performance requirements that must be guaranteed.

Litigation between the government and its contractors is increased.

Section 794 will produce protracted litigation. The Government's open-ended performance requirements will result in disagreement with contractors on their ultimate liability for system or component failures. In turn, more litigation between prime contractors and their subcontractors will result. The risks resulting from section 794 will increase litigation before the Boards of Contract Appeals and the courts.

The availability of the cost effectiveness waiver provision as a management tool of DOD is ineffective. Industry is unable to accurately calculate the cost of compliance with the open ended performance guarantee. DOD is unable to define all the direct, indirect, and collateral cost effects so as to document and justify a waiver guarantee to Congress' satisfaction. The delays, paperwork, and costs associated with such an ineffective procedure would further inhibit an already complex procurement system.

Chairman TOWER. Senator Stennis?

Senator STENNIS. Mr. Chairman, I am very much interested in the subject matter here because I know it is a big problem. I talk to Senator Goldwater about this more than any other Member. When I was chairman I did more worrying about this subject than any other subject, but did less about it in total results. I think it is one of the greatest challenges to the committee system, the Congress.

I remember the C–5 debate. It was not all that the C–5 people thought. I was acting chairman and I handled the bill on the floor. As I remember, we suspended the debate and gave them time to make some adjustments. The next thing I knew the Banking Committee had recommended a bill financing it. Anyway, that was settled, but it did not turn out well.

Now I am not versed in this field at all. I don't know anything about the mechanics, and so forth but I feel that we have to do something about this.

The gentleman from North Dakota shows an aptitude in this, and we all know he is a determined man. So, I commend him highly and hope we can do something about it. I hope that we can have cooperation.

Anyone who has been in on the problem knows that it is a grave problem. The figures that are staring us in the face now in the Department of Defense appropriation bill, and I am strong for military preparedness, stagger me and I have been around a good while dealing with figures. It is not something new.

What staggers me is how long we can go with the way things are piling up now. Anything along this line warranties or anything

else are of interest to me and I will support anything that I think will bring results.

I have no questions.

Chairman TOWER. Senator Wilson?

Senator WILSON. Thank you, Mr. Chairman.

I will join the swelling chorus in commendation to Senator Andrews. I think that his experience on the Appropriations Committee and experience in both Houses is reflected in the concern that he has brought to focus on this legislation.

I really have only two questions for him.

I have just begun to scan the testimony of Dr. DeLauer. He begins by pointing out some of the present provisions used by the Department of Defense in order to achieve some of the objectives that Senator Andrews and the rest of us are concerned about.

Focusing on warranties, he says,

> It is particularly important, however, for the Government, just as for consumers, to ensure that the warranties which are purchased are worth the cost. Our experience tells us that warranties must be carefully analyzed, must be enforceable and must be carefully negotiated to make good business sense.

You have just stated quite clearly and with great force, Senator Andrews, that it is your expectation that over the long term the requirement for warranties of design and not just specifications of quality will result in long-term savings to the taxpayer as well as quality in the field for our servicemen and women.

What effort has been made to test out that thesis? Has there been any effort to try to project what the cost of warranties will be by OEO or GAO or anybody else?

Senator ANDREWS. No. We have had a lot of flack, shall I say, Senator, from people who say that a guarantee that says that a weapon will work as it is supposed to work is going to cost considerably extra.

That only leads you to believe that the manufacturers who are saying that concede that the weapons they are manufacturing won't work as designed and what a tragic cost that is to the preparedness of this country.

We can go back and look at horrible examples in the past that Senator Goldwater and I were talking about, and the people are not around any more, but we know that the system is not working.

We know in the first warranty we wrote into law a year and a half ago dealing with fighter engines the Secretary of the Air Force says that it is going to save money.

This is a Washington Post article of February 12, saying:

> The Air Force says it expects to save as much as $3 billion over the next 10 to 20 years because the engines it gets will be more dependable and efficient.

They talk about the warranty as being a key factor in that.

The fact that every airline in this country for years has gotten warranties on their engines made by the same plants indicates the system will work.

No, I can't sit here and categorically say that the warranty will save zip amount of dollars on a given weapon system.

But given reports of shoddy workmanship and weapons that don't work out in the field and weapons that don't work when they are in the hands of the military, something has to be done.

In talking, Senator, with many manufacturing companies in your State of California they have told me of the great difference, and they told me really with a chuckle and off the record because, mind you, their biggest customer is the Pentagon and they can't get sideways with the Pentagon in any open statement, but they talk about the two lines of production they have, for the civilian side and for the military side and they tell me that when a change comes up that is obvious to them, that they incorporate it in the civilian side, but there is too darn much redtape to incorporate it in the defense side.

So, those systems that are going off those assembly lines for civilian consumption are being updated and made to work better than the ones that are coming off the same plant lines to protect our freedom.

That is idiotic. They say if they get an idea and they want to send it to the Pentagon for a change, it takes about a year to get it through all of the redtape. They incorporate it immediately in the models that go to civilians.

If the Pentagon sends an order down from on top, they have to incorporate it immediately and sometimes they say it is much less than satisfactory and it does in fact lower the dependability of that particular bird.

But they have to put it on. It is this differentiation that I have seen firsthand in these plants, many of which are in your State that led me to think that a warranty is long overdue.

Senator WILSON. You have actually had comments in the course of your own personal investigations from contractors who have maintained that they have received from the Department of Defense or from a Government customer a directive to make modifications that they thought unwise and ill advised and they have simply gone ahead and made it?

Senator ANDREWS. That is right.

Senator WILSON. Did they protest?

Senator ANDREWS. Given the military procurement system, Senator, they are not able to do much protesting if they want to stay in the loop, so to speak. That is part of the problem we have.

Senator WILSON. How will modifications affect the warranty performance? Does it mean when DOD suggests modifications that there will have to be a reconstruction of the warranty and modification of the warranty?

Senator ANDREWS. No. Under a change order from the Defense Department with a warranty on that particular weapon, I would imagine that it would work as any change order that comes in on the civilian side.

The contractor will look at it and the engineering staff will look at it. If it is "Will the system perform better," they will incorporate it immediately.

If they think it is going to be chancy because they have the responsibility under the warranty, they are going to go back to the DOD and say, "No way unless you send us a written waiver of warranty."

If they send a written waiver of warranty, that has to go into the loop through Congress, the people's branch, and I think it will keep

us from making some mistakes that we know to have been made in the past.

Senator WILSON. Just to make the point of fairness, I guess I am giving Dr. DeLauer unfair warning that I will be asking all the same questions of him.

Senator ANDREWS. I point out one other thing, and this is California again.

You know Northrop has an F-20 fighter they built themselves. It is the kind of plane that Senator Goldwater is intrigued with. It works darn well and it is built to sell.

Unfortunately, the Pentagon has not put its blessing on it yet, so it is difficult to sell overseas. It sells with full warranty because the other countries that would buy it are used to buying with warranties.

Our NATO partners are used to buying with warranties. Certainly if they can provide a warranty on an F-20 sold to other countries, then the manufacturers of the F-15 and F-16 and the rest can provide a similar warranty on planes sold in our country.

Senator WILSON. My only other question, Mr. Chairman, is this one.

In the beginning of the testimony Dr. DeLauer makes the comment:

> When performance specifications and design are of major importance, the "correction of deficiencies" clause (DAR 7-105.7(c)) is suitable. This requires the contractor to correct any deficiency found after the time of acceptance for a specified period of time (i.e., usually 6 months to a year) or the occurrence of an event (i.e., number of miles, cycles, et cetera).

In drafting your legislation I gather that you took into consideration the existence of remedies available under the correction of deficiencies clause and found that to be inadequate and, therefore, brought forth your legislation.

Did you make a specific comparison of how different kinds of failures might be treated by warranty as opposed to this particular clause?

Senator ANDREWS. Senator, might I point out that there is nothing in the law on warranties that would preclude that kind of arrangement being written in the warranty for weapons systems.

Let me point out that from what I have heard around the table, I hardly recognize my own child. This is the law that requires warranty. It is on one page of paper. This says we shall have warranties. It is permanent legislation. It does have teeth in it.

But the structure is deliberately, and of necessity, left to the Defense Department to establish the specific warranties on each weapon. I can't abrogate unto myself, no committee of this Congress could put together warranty language in bill form that would deal with all of the separate weapons that we need to maintain our Armed Forces.

So, it is a simple piece of legislation that says do it and hopefully they will get off their duff and start doing it.

There are enough examples on how it is done, built up over many years, as I pointed out earlier, to show them how to do it.

But as to the quote you have from Dr. DeLauer, there is nothing in this law that precludes that being a part of the warranty re-

quirement for that particular type of weapon, as I understand it, as you read it to me.

Senator WILSON. My question really, though, is that this exists and has existed and you have simply found that it did not go far enough as a remedy.

Senator ANDREWS. No, it does not go far enough because the Members of this committee know better probably than any other people in Congress what has happened in weapons procurement relative to lack of dependability?

Chairman TOWER. Senator Kennedy?

Senator KENNEDY. Thank you very much.

Senator Andrews, I want to join in expressing appreciation for your presence here today and for what I think are your excellent responses to the questions that have been raised.

I am also mindful that there are times when people describe an idea, a concept or even a law and distort it, perhaps misrepresent it and say they differ with it.

I think you have given a very clear explanation of the law, both as you intended and as the law has actually been accepted by the Congress and signed by the President.

I think it has been enormously valuable and useful. It is particularly appropriate that you appear before this committee because this is the authorizing committee and, although I am a relatively junior Member of this committee, I have already heard a great deal of testimony about particular weapon systems that have been developed and about our ability to build these various weapon systems. On the basis of this testimony the committee makes a judgment whether to go ahead and build new weapon systems.

Too often in the past we have heard grandiose claims made and then the weapon systems have failed to perform.

I think the thrust of your amendment is to ensure reliability, assure accountability and responsibility and assure that the taxpayers' interests will be protected.

You mentioned earlier the warranties on particular weapon systems on particular fighters. I know that in recent months there has been a decision made by the Defense Department that will save, as you pointed out, billions of dollars on the basis of the warranty provisions for fighter aircraft.

This decision buttresses your testimony.

I look forward to hearing why manufacturers believe this will present some requirements for them which they don't believe to be consistent with the national interest or conducive to the development of new weapons systems. I will consider that carefully.

You have already covered the issues I wanted to raise in your response to earlier questions, but I do think these issues continue to be the basis of a good deal of concern. Specifically, I mean how to continue developing state-of-the-art technologies, how to adapt such innovations, and how to foster the creativity that will make a particular weapon system more effective, more efficient, and more capable for the fighting men and women who will use it.

I think you probably responded, as you mentioned earlier, that prototypes must be developed first and then new state-of-the-art technologies can be worked into them. After that, guarantees can be worked out with regard to future procurement.

I am wondering in your own review and your own study of this issue, whether the argument suggesting that these prototype technologies will hamper the development of the state-of-the-art features, whether it has been adequately considered, and whether you think this will inhibit innovation and creativity in particular kinds of weapon systems as they move through the process.

You have pointed out that the time necessary for the development of weapon systems is considerable, particularly as these weapons become more sophisticated.

How are we going to ensure that the new ideas, the creativity, the state of the art can actually be ensured in these new weapon systems?

Senator ANDREWS. Senator, I appreciate the point you bring up and it is one that is of deep concern to me as it is to you and I would hope to every Member of the Congress.

I think a warranty requirement should enhance creativity, should do everything to, shall we say, encourage the fantastic design, research and engineering departments of these weapon contractors to bring into being as rapidly as possible better performance characteristics in the weapons they are manufacturing because they have that great incentive of having to stand behind what they are doing.

Anytime they get a new idea that is going to make it work better, a warranty would be a powerful incentive to have them bring that forward.

Today, however, with no warranty on it, there is a tendency to sit back because there are five dozen layers of bureaucracy to go through before they can change some part.

Senator KENNEDY. You are satisfied that both your proposed legislation and the process that you envisage would facilitate those particular innovations and creativities and permit the kind of changes necessary to improve various weapon systems and do it in an efficient way?

Senator ANDREWS. Senator, this is the law, one page. It is very simple. It says get warranties.

It also points out specifically in the law—because of the deep concern I have for the problems that Senator Goldwater raised, I have written that—might I read this under section (b):

> A written guarantee provided pursuant to subsection (a) shall not apply in the case of any weapon system or component thereof which has been furnished by the Government to a contractor.

In other words, we are not forcing them to warrant the stuff the Government gives them to put on a ship.

We also point out that the subcontractors are liable. We have the basic guts of what the Defense Department should come up with.

It is one page and it lets the Defense Department go ahead and write the specifics.

Senator KENNEDY. Let me go into a slightly different area, a concern that many of the members of the Small Business Committee would have that warranties will become so stringent that the major manufacturers will absorb many of the functions that are now being provided by small business.

Since they are going to have to give these warranties—given the complexities of the various weapon systems—the major corporations are not going to want to depend too heavily on the small business sector and they may, therefore, start to consolidate more and more of the financial and productive capability among themselves and squeeze out some of the small ones.

What is your own judgment? Is that a legitimate concern?

Senator ANDREWS. Senator, the warranty requirement should enhance the possibilities of small business getting these subcontracts. Let me explain why.

Today there is an understandable tendency in the Defense Department to take a look at the bigger corporations and say they can do it, we know we can rely on it, let them, and they do.

With the warranty, a smaller company can come along and say, "Look, we can meet the same warranty requirements for this particular piece or component and let us bid."

Under warranty, I would think they would have a better chance of bidding because they are saying, "Look, we will furnish the warranty, we will do it."

Senator KENNEDY. What has not been mentioned here is that there are also provisions within the legislation that permits the Secretary to waive these particular provisions. If he believes that either it is not cost effective or is contrary to national security.

Senator ANDREWS. That is right.

Senator KENNEDY. As I understand it, maintaining this warranty provision will permit the Congress, the authorizing committee, and the appropriating committee, a better opportunity to determine whether those judgments and decisions made by the Secretary of Defense have been sound (in terms of those particular items).

Senator ANDREWS. We have written in that he can waive, but he has to notify the Committees on Armed Services and Appropriations of his intention to waive with respect to such weapon systems and include in the notice an explanation of the reasons for the waiver.

So, there is a double protection there.

If he decides to waive, so be it. We can't write in a piece of legislation anything complex without giving a relief valve. But the relief valve is specific, back to the people. It gets it out of the tidy holes of the Pentagon where too much of it has been covered too long.

He not only has to say it should be waived, but tell why. If they are not justified, they can call up and say this doesn't make sense and move with an appropriate warranty.

Senator KENNEDY. Senator, I want to commend you. I think there has been some response by the DOD already in terms of trying to move toward compliance.

The idea of the warranty may be an old idea, but it certainly is a new idea to the Defense Department. I just want to commend you for the work that you have done on it.

I am very grateful for your presence here and for your response to questions.

Senator ANDREWS. Thank you very much, Senator.

Chairman TOWER. Before I call on Senator Quayle, let me note we have another panel with four people on it to make a presenta-

tion. I am prepared to go through the noon hour and give everybody a chance to miss their party caucuses.

Let me ask you, if you can confine your questions to fewer than a 10-minute allotment, it would be helpful.

Senator Quayle?

Senator QUAYLE. I get the message, Mr. Chairman. I will just take 1 minute.

I would like to thank you for having this hearing and I thank Senator Andrews for being here as one who has made us more conscious of the concept of warranties in defense procurement. It is an initiative I am very interested in. I commend him for delving into the issue.

As he has indicated here today and before the Budget Committee, he is willing to work on the details to have defense warranties applied on an efficient basis. It is clear there will be further discussion and it is also clear that we need some administrative safety valves.

I know that Senator Andrews is willing to work with the committee.

I look forward to working with you, Senator Andrews, and others, in getting the most efficient application of warranties that we possibly can.

Senator ANDREWS. Thank you, Senator.

Chairman TOWER. Senator Exon?

Senator EXON. Thank you, Mr. Chairman.

I just want to join my colleagues in saluting our distinguished colleague from North Dakota for this. I have been concerned with this issue for some time now.

You have shown restraint on several occasions on the floor by not pursuing amendments with the understanding that you would have a chance to come here and be heard. As you can see, we take the subject seriously.

I have just one question that we have discussed to some extent in the past, Senator.

As you would define your bill, what is the intent of the legislation? Would it call for unconditional guarantee for the life of the rifle, for example?

Senator ANDREWS. No, Senator. The law calls for the Pentagon to get warranties on any weapon system. The warranty, of course, will differ as the weapons differ.

Senator EXON. So you are leaving to the experts in the Pentagon the definition of how lengthy the warranty should be?

Senator ANDREWS. We spelled out, Senator, in the earlier legislation that was passed on derivative fighter engines a specific warranty for 3,000 tactical cycles. But that was for one weapon system, for a derivative fighter engine.

After the experience with that last year, we included, and it was passed into the law, this new one, a provision that calls on the Pentagon to institute warranties on all weapon systems and leave the discretion to them, subject to review, if they want to waive the warranty, by the Congress of how they specifically state these warranties weapon by weapon.

Senator EXON. And, therefore, would it be fair to say that the extent and the length of the warranty, would essentially be a judgment call by the Pentagon?

Senator ANDREWS. That is right, subject to the review of the Congress.

If we see the warranties are not, in effect, warranties and they are fluff holes that they are doing with no teeth in them, obviously the committees will call the Defense Department to task and tell them to get with it.

Senator EXON. Thank you.

Thank you, Mr. Chairman.

Chairman TOWER. Senator Thurmond?

Senator THURMOND. Mr. Chairman, I will defer my questions now until Dr. DeLauer comes before us.

Chairman TOWER. Senator Andrews, thank you very much.

Senator ANDREWS. Thank you very much. I appreciate your time.

Chairman TOWER. Our next witnesses are Dr. Richard DeLauer, Under Secretary of Defense for Research and Engineering; Adm. Steven A. White, U.S. Navy, Chief of Naval Materiel; Lt. Gen. Donald Babers, Deputy Commanding General for Materiel Readiness, U.S. Army Materiel Development and Readiness Command [DARCOM]; and Lt. Gen. James Stansberry, U.S. Air Force, Commander, Electronic Systems Division, Air Force Systems Command.

Dr. DeLauer, you and your colleagues on the panel may present your statements in full or you may submit them for incorporation into the record and summarize them and you may submit any supporting material that you have for incorporation in the record.

In any case, you may proceed as you see fit.

Dr. DeLauer?

STATEMENT OF HON. RICHARD DeLAUER, UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING

Dr. DELAUER. Thank you, Mr. Chairman.

I would like to submit my written statement. I will paraphrase it so that we can get into the questions as soon as possible. If that is all right with you, I will submit it for the record.

Mr. Chairman, I will open up to say we in the Defense Department are in agreement with the goals and objectives of Senator Andrews' law which he keeps saying, which is indeed true, is the law of the land and we have to comply.

Now, section 794 of the Appropriations Act, the law that is written, and Senator Andrews covered it very aptly in the last hour and a half, requires of the Defense Department that we go out and get written guarantees concerning performance and workmanship for weapon systems and their components unless a waiver is granted in the interest of national defense or on the basis of cost effectiveness, and that waiver has to be signed by the Secretary of Defense.

From the discussions in the past few minutes, it is also clear in Mr. Andrews' mind that waiver would have to come over before four committees to be reviewed before it could be implemented. It is the administration of this law that we have concerns with.

I should like to point out the fact that we have loosely used this morning and throughout this whole discussion over the period of the last year the semantics of warranties, guarantees, and incentives as interchangeable, and they are not.

There are certain things that fall under each of these categories and they have to be spelled out and I will attempt to do that in a moment.

Now, we support the basic goal of the legislation and in fact we have regulations in effect that implement in many respects the goals of Mr. Andrews' legislation.

Now, we implement cost-effective measures to give us quality. There is no reason in the world why we should not have as much quality in our defense products as we expect to get in the consumer area, the point that Mr. Andrews keeps pointing up.

I assert in most cases we have better quality than we get in some of the consumer areas.

WARRANTIES, GUARANTEES, AND INCENTIVES

Now, warranties, guarantees, and incentives are essential in order to satisfy these goals.

Now, the Defense Department has warranties, guarantees, and performance incentive programs now in existence. The defense acquisition regulation, the DAR 7-324, states current policy on warranties:

> The principal purpose of a warranty in a Government contract is to delineate the rights and obligations of the contractor and the Government for defective items and services, and to foster quality performance.

That is in our regulations. All Department of Defense fixed-price supply contracts, the ones that Mr. Andrews keeps referring to, the tractor, truck, similar items, all DOD fixed-price supply contracts include protection against defects and assure compliance with the contract provisions at the time of acceptance through the mandatory inspection and acceptance clause.

It provides:

> In case any supplies or lots of supplies are defective in material or workmanship"—that is what we talk about, that is the defects in workmanship issue he is talking about—"or otherwise not in conformity with the requirements of this contract"—if we have additional requirements in the contract—"the Government shall have the right to either reject them * * * or require their correction.

Let me put parenthetically here, since the issue was raised about the C-5A, the C-5A indeed had in the basic contract the correction of deficiency clause.

The issue that the Senator raised in regard to the wing was a different issue and had to do with the fatigue life of the wing and the fatigue life of the wing as a contract provision was a goal and not a requirement.

Now, performance specifications and design are of major importance. The correction of deficiency clause which I quoted is suitable.

This requires the contractor to correct any deficiency found after the time of acceptance for a specified period of time, usually 6 months to a year, or the occurrence of a particular event such as so many cycles of operation.

We also use performance incentives to motivate the contractor on certain performance characteristics. Sometimes these are negative incentives like a financial penalty for operation of a satellite for less than a designated period of time.

As the producer of the defense communications satellite No. 2, which is now in operation, that provision for performance incentive was that if the satellite failed in the first 2 years, the contractor—in that case it was myself—had to pay to the Government, as I remember now, $3 billion, and then from 2 to 3½ years that slowly was eroded until we finally got into a positive incentive position.

It was stated earlier in the testimony that other people have incentives on satellites. So do we.

Everything that Mr. Andrews brought out in his testimony about what other people are doing in regard to incentives for quality, guarantees for performance and warranties for workmanship and material, the Defense Department now does and we have them on contract.

As was pointed out by Senator Wilson when he read part of my testimony, to do this, it is necessary for us to analyze, be sure that we can enforce it, that it can be measured and enforced and we have to negotiate carefully contract by contract how we would put this situation in.

We have to be sure also that these characteristics are the most critical ones, the ones that are necessary for a successful operation and maintenance of the weapon system.

We should buy only what we can afford and that calls for careful consideration. We cannot just assume that we can put on a guarantee performance on every single contract that we write. We need the flexibility to look at it.

I don't consider, in my view, ability to be able to have a waiver and report back to Congress on every single case flexible. As a matter of fact, it is less than flexibility. It is an administrative burden that I think we would like to have you consider some way to lighten.

Now, for two decades we have been using warranties. The services had warranties prior to 1964 on an individual basis. Each service did its own thing.

In 1964 the Department of Defense tried to bring these together in some form of uniformity. That is essentially where we stand now.

They are beneficial and they are widespread. The services will bring out the specifics, but let me give you a general overview.

About one-third of the 4.1 million types of items in the inventory are covered by some form of warranty now. We use warranties, guarantees, and incentives when we identify direct and indirect cost and the potential benefits of trade-offs which are involved.

We have to look at the situation and be sure that it makes sense. Then we decide on a case-by-case basis whether to go ahead.

Our experience has shown, and as you pointed out Mr. Chairman, in your remarks, they seem to work best in a competitive environment.

That brings me to what is now the procurement of the month, the derivative fighter engine program. Let me use that as an exam-

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ple of what I am trying to advocate as the way we ought to administer this warranty and quality effort.

Here are the features of the warranty in the fighter engine.

There is warranty against unserviceability and defects in material and workmanship for 1,000 flight hours or 3 years. That is in the contract. That is a warranty. That is for materials and workmanship.

There is a guarantee of the hot section. That is combustor and high pressure turbine. The guarantee is on its durability. It has to go through at least 3,000 tactical cycles. The current fighter engine, the 100 engine, has a requirement of 1,350 cycles. This doubles that.

It is indeed true, as Mr. Andrews pointed out, that was a requirement that was debated in the Congress and put into authorization legislation as well as appropriation legislation that we indeed do have 3,000 tactical cycles as a requirement and we implement that.

Now, we have a guarantee of performance incentive in the same contract. That is for the purpose of thrust retention, fuel consumption and engine removal rate, three very high-cost items to us. If the contractor can meet certain guarantees in the area, it is a savings to us.

Now, I would like to point out this is a very good program, but it is not in compliance with section 794. We will have to write a waiver. Why? Because there are provisions in regard to this particular procurement where the Air Force is going to do the work in the replacement of a part and yet in section 794 it states that the contractor has to do that.

So, we will have to provide a waiver, it appears, to that particular program.

Why do we want to do the labor? We have to develop a maintenance force. We can't always go to Evandale or Hartford to tell them to send somebody out to fix the engine. We have to develop a maintenance force within the service for wartime contingencies and in dispersed locations.

So, it is more cost effective for the Defense Department to replace that part than to have the contractor provide it to us.

That does not match section 794. This is the inflexibility that I would like to talk about.

Now we are going to need a waiver, partial waiver on almost every single one of our contracts. Notwithstanding the fact that the law itself provides a period of time that is grandfathered, any further contracts we have under the same program require us to comply with that statute and that is a tremendous administrative burden.

Now we are proceeding with the implementation of section 794 and therein lies some of the problems. We have put out a circular for comment. That is the reason for some of the noise you are hearing from the people who have to comply with this.

We have tried to be as comprehensive as we could in the issues that the law implied and the way we have to administer it and that is coming back.

Why is this a problem for us? We have 14.8 million procurement action in fiscal year 1983. We can't change that procurement ac-

tions in fiscal year 1983. We can't change that procurement process instantaneously as the legislation requires.

It is going to take us some time to define, analyze, and negotiate cost-effective guarantees and warranties and incentives. We have to resolicit certain proposals and we have to get on with negotiation.

It is going to be a tremendous administrative workload. I will leave the service and material chiefs to comment on that.

Certainly the cost of these things has to be taken into account. We have not in our budget, both in the 1984 budget that has been passed or the 1985 budget we have submitted to the Congress, the amounts that it will cost us for doing exactly what section 794 asks for because they do not come without cost.

Senator NUNN. Mr. Chairman, may I ask a clarifying question at this point.

Chairman TOWER. Yes.

Senator Nunn. Could you repeat what that 14 million figure is?

Dr. DELAUER. This was a statistic in 1983, there were 14.8 million procurement actions.

Senator NUNN. Does that correlate to the number of waivers you would have to seek?

Dr. DELAUER. No. A lot of these procurement actions, however, if they are fixed price, have warranties on them.

For instance, if we buy the same tractor as Senator Andrews' tractor, we get the same warranty.

Let me read that since you raise that issue.

Chairman TOWER. In other words, on any of the off-shelf-items you buy you get the same warranties that the consumer gets?

Dr. DELAUER. Yes. Let me give an example of what we are getting at.

There is a warranty on the engine and a warranty on the new Allison transmission used in agricultural machinery. This is from one of our contractors, Allison, General Motors' diesel engine, they make diesels for us. There is a warranty limitation and adjustment schedule of 36 months or 2,500 hours of operation.

The owner pays no charge for parts or labor under the terms of the warranty. But there is a list of exceptions.

This warranty does not cover malfunctions resulting from misuse, negligence alterations, accidents, or lack of normal maintenance service.

Any transmission which has been repaired by somebody else does not get covered. The replacement and maintenance items such as filters, and so forth, have to be done in order to do it.

The loss of time and inconvenience is not covered as a consequential damage. That is the diesel engine contract. It is essentially workmanship and material.

We have them in every single one of our contracts that buys similar equipment. We have a system in place. All it needs to do is to be implemented as we have been implementing it.

It does not, however, require us on every single contract to get a performance guarantee as does section 794.

Now, what we would like to do is what was suggested by Senator Goldwater, sit down and try to negotiate and agree on whether or not our particular acquisition regulations are still effective enough

in their application to be able to reach some of the goals that Senator Andrews is advocating.

We would very much like to sit down and do that. We would like to be sure that the language has a couple of characteristics.

One, that it recognizes warranties, performance guarantees and incentives as indeed three different approaches to quality. Each should be applicable to the appropriate system.

In turn, we think it is proper that if we do indeed waive any of these requirements on any of our contracts, that we report it to the Congress. We would like to report it to the Congress on an annual basis. Then we could review it as we do every year when we come up for both authorization and appropriations on how we did on this sort of thing.

But to impose the requirement that is now written in section 794 on top of us at this stage of the game, I guarantee you is going to take resources, it will cost us money and is not going to give us any better quality.

With that I will close, Mr. Chairman, and let you ask some questions.

[The prepared statement of Dr. DeLauer follows:]

PREPARED STATEMENT OF DR. RICHARD D. DELAUER, UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING, DEPARTMENT OF DEFENSE

Mr. Chairman and members of the committee, I appreciate the opportunity to speak with you today on the subject of warranties for our military weapons systems.

As you know, section 794 of the fiscal year 1984 Appropriation Act requires written guarantees concerning the performance and workmanship for weapon systems and their components unless a specific waiver is granted in the interest of national defense or on the basis of cost effectiveness by the Secretary of Defense. The basic objective of the legislation is to insure that the department purchases weapon systems which work in the way in which they are intended at the time when they are needed.

We wholeheartedly support this goal and are committed to the fullest implementation of cost effective warranties. Just as each of us desires confidence that our personal purchases meet our expectations, so it should be that the government can purchase sophisticated items such as weapon systems, with equal confidence. Indeed, in order for us to be a consumer in a free society, we must first assure that we have an effective and reliable means of defense. Warranties are an essential means to satisfy this vital goal.

In fact, the Department of Defense has warranty, guarantee and performance incentive programs now in existence. Defense acquisition regulation (DAR) 1-324 states current policy on warranties:

"The principal purposes of a warranty in a government contract are to delineate the rights and obligations of the contractor and the government for defective items and services, and to foster quality performance."

All DOD fixed-price supply contracts include protection from defects and ensure compliance with contract requirements at the time of acceptance through the mandatory inspection and acceptance clause. DAR 7-103.5 provides this protection:

"In case any supplies or lots of supplies are defective in material or workmanship or otherwise not in conformity with the requirements of this contract, the government shall have the right either to reject them—or to require their correction."

When performance specifications and design are of major importance, the "correction of deficiencies" clause (DAR 7-105.7(c)) is suitable. This requires the contractor to correct any deficiency found after the time of acceptance for a specified period of time (i.e., usually six months to a year) or the occurrence of an event (i.e., number of miles, cycles, etc).

We also use performance incentives to motivate the contractor to emphasize a certain performance characteristic. Sometimes these are negative incentives like a financial penalty for operation of a satellite for less than a designated period of time of performance.

The military departments all use these and other forms of protection. According to a recent count, the Army has over 500 contracts with warranties of one type or another. The Navy obtains coverage for certain periods of time on all ships, from aircraft carriers to oilers; all airframes, from fighters to trainer helicopters; and all ship repair contracts. The Air Force uses warranties or guarantees on aircraft engines, avionics, satellites and airframes. Correction of deficiencies protection for a certain period of time is standard practice.

It is particularly important, however, for the government, just as for consumers, to insure that the warranties which are purchased are worth the cost. Our experience in this area tells us that warranties must be carefully analyzed, must be enforceable, and must be carefully negotiated in order to make good business sense. Primary focus should be upon those characteristics which are most critical to the successful operation and maintenance of our weapon systems. We must be certain that warranties we purchase result in superior field performance, lower support costs, and higher levels of readiness. We must exercise care, however, that performance guarantees and warranties don't end up costing far more than their potential worth.

BACKGROUND

The use of warranties is not new to the Department of Defense (DOD). Their use goes back at least two decades; warranties were used on an independent basis by individual services for many years prior to 1964. In 1964, the first departmental instructions were issued concerning the use of warranties in firm-fixed-price contracts. Several expansions and improvements have been issued by the department since that time. The most recent of which is contained in defense acquisition regulation (DAR) 1-324.

We have applied this policy in the past, and will continue to do so in the future. I won't take time to go into detail concerning DAR 1-324, but I will say that it constitutes comprehensive and straightforward guidance concerning the use of warranties.

The department's use of warranties in recent years has been beneficial and widespread. Based on a 1979 survey, one-third of our 4.1 million types of items in inventory are covered by some form of warranty. In addition to warranties on workmanship and material, existing commercial warranties are generally included in our purchase of commercial products. Furthermore, all of our contracts and purchases have mandatory inspection clauses which provide for pre-acceptance inspection to determine defects in material, workmanship, and other non-conformities to contract requirements.

As a matter of practice, the department has entered into a variety of product performance agreements or guarantee arrangements in which we have specifically tailored application on a case-by-case basis. Examples of performance agreements/guarantees include reliability improvement warranties, which are used to improve reliability and reduce support costs. We have used these effectively in the acquisition of tacan radios, aircraft engines, and various components of aircraft avionics.

We have also used other warranty variants to insure that our requirements are met. These include warranties concerning mean time between failure (MTBF), mean time to repair (MTTR), and mean time between unscheduled removals (MTBUR). We have used warranty of supplies (similar to a standard commercial off-the-shelf warranty), warranty of technical data (to ensure that technical data contract requirements are met), availability guarantees (to ensure that our equipment is ready to use when needed), and logistic support cost commitments (LSC) (to achieve logistics support cost goals.) All of these are in addition to any performance incentives which may be included in the contract.

The Department has supported and continues to support the use of warranties as a vital tool in acquisition management. We have always analyzed the cost benefits of warranty application, and in so doing, identified the direct and indirect costs, benefits, and potential tradeoffs associated with the use of a warranty.

Our experience has shown that warranties work most efficiently and effectively in a competitive environment, when they are selectively applied to specific components, and when their application is clearly defined and based on established technology. A recent example which characterizes this is illustrated by our experience with the warranty on the alternate fighter engine (AFE).

ALTERNATE FIGHTER ENGINE (AFE)

The fighter engine warranty is the product of extensive experience with commercial and military jet engines, previous engine warranties, careful analysis, and very importantly, the forces of competition.

The AFE competitive acquisition, including the warranty provisions, was carefully structured and negotiated over a considerable period of time in an area where we have a great deal of experience in warranting a specific line. The Air Force uses one office to buy all required aircraft engines. Over the years, this office developed expert knowledge of military aircraft jet engine warranties, as well as the commercial warranty practices of General Electric and Pratt and Whitney.

This experience, coupled with careful analysis concerning warranting engine performance and workmanship, led to the AFE warranty, which addresses critical program parameters such as engine unserviceability, defects in material and workmanship, hot section durability, thrust retention, fuel consumption, and engine removal rates.

Engine improvements and the forces of competition regarding the AFE, led to the negotiation of provisions quite favorable to the Government. Some of the principal features of the warranty are:

A warranty against engine unserviceability and defects in material and workmanship for 1,000 flight hours or 3 years, whichever occurs first.

The guarantee of hot section (combustor and high pressure turbine) durability of at least 3,000 tactical cycles. A tactical cycle is a measure of engine throttle movements from zero power to intermediate or to maximum power, plus a percentage of throttle movements in between idle and maximum throttle positions. Fighter aircraft typically record about two tactical cycles per misssion. (The current P&W fighter engine value is 1,350 cycles.)

The guarantee of thrust retention, fuel consumption, and engine removal rates for the first time on fighter engines.

The contract provisions comply with and go beyond the relevant provisions of the fiscal year 1983 appropriation act. The competition, however, was conducted prior to and immediately after enactment of the fiscal year 1984 appropriations act. Consequently, there are differences between the provisions of the warranty and what is required now by section 794. The fighter engine warranty is an example of an excellent warranty provision, and yet it may not be fully compliant with the letter of the law in section 794.

In some features of the AFE warranty, for example, the contractor is responsible for replacement parts while the Air Force agrees to perform the required labor. Section 794 specifically requires the contractor to bear all costs. In other features of the engine warranty, the government would provide transportation of the engines to and from the factory. Here again, this is a departure from the requirement in section 794 for the contractor to bear all costs.

A further feature of the engine warranty is a limit on the total cost liability of a contractor under the warranty. We believe this limit is unlikely to be reached and represents little or no risk to the government, but again its presence may not be fully compliant with the law.

I make these points not to indicate shortcomings in the Air Force's engine warranty. There are good reasons for the differences. For example, the Air Force must be able to perform maintenance on the engine, and therefore it is unnecessary to include contractor labor and certain repair services. The engine warranty is compliant with the fiscal year 1983 law requiring a warranty on 3000 tactical cycles, and it was being negotiated before the fiscal year 1984 law was enacted. My point is that even this "best example", which took years to analyze and negotiate, and which we fully support, would not totally safisfy the fiscal year 1984 law. Under section 794 we might still need a waiver (or partial waiver) to be able to use this warranty at the time production options are exercised in the future.

Should the AFE program require a waiver, then it appears to me that many of our programs might need a waiver of some sort, since on most programs, time will be required to design, price the cost of a performance guarantee for critical characteristics, analyze tradeoffs, and negotiate a cost-effective warranty.

IMPLEMENTATION OF SECTION 794

Under the fiscal year 1984 law, the Secretary of Defense may waive the requirement for a warranty, and if he does so, he must notify the Committees on Armed Services and Appropriations of the Senate and House of Representatives in writing of his intention to waive the requirements for written guarantees for each case and

include an explanation of the reasons for the waiver. This procedure, however, is not appropriate as a permanent way of dealing with the issue.

The DOD fully supports the cost-effective use of performance guarantees and warranties, however, I foresee some issues with the implementation of section 794 of which I think you should be aware. The first is a matter of timing: The second concerns cost.

A system as large as DOD's acquisition process with 14.8 million procurement actions in fiscal year 1983 cannot change instantaneously. Effective implementation of section 794 will require time for an orderly transition to be made. As I have stated, it is imperative that each program be thoroughly analyzed to identify the critical characteristics where performance guarantees and warranties will be cost-effective in order to comply with this provision as written. Program schedules will be impacted and there will be stretchouts.

The immediate application of section 794 is going to require the resolicitation of existing proposals or those in negotiation. It is going to require the renegotiation of all production priced options and not-to-exceed ceiling prices for existing production letter contracts.

This leads directly to the second major issue which we must face—cost. Guarantees cost money. There is no additional money in the fiscal year 1984 budget to cover the cost of implementing the section 794 policy.

The problem is further complicated by the fact that guarantees required by section 794 are different than commercial warranties. For example, the Detroit diesel Allison transmission warranty (used in agricultural machinery) covers only defects in material or workmanship, at no charge for parts or labor, for 36 months or 2,500 transmission hours/miles whichever first occurs. Repairs must be done by Allison or its designated dealer. The warranty does not cover malfunctions from misuse, alterations, lack of normal maintenance, or work performed by other than an authorized service outlet. It does not include replacement of normal service items like filters, screens, and transmission fluid nor the loss of time or use of the machine or other consequential damages. Most significantly, it does not cover any performance requirements for the tractor such as fuel consumption, horsepower, etc. However, these are the kind of performance guarantees that section 794 requires.

For military systems, on the other hand, we would have to be concerned not only with possible defects in material and workmanship, we would have to be sure that a system performs at required levels. We are vitally interested in specific areas such as fuel consumption and engine thrust performance. The point is that we can only afford guarantees on performance on a selected basis.

There are other, additional means we use to ensure that our systems perform at required levels, such as the use of performance incentives and product testing. These cost money too, especially since our needs often go beyond what occurs in the commercial world due to the radically different physical environments in which our weapons systems must operate. We must, however, ensure coverage on characteristics which are essential to successful military performance. We should pay only for what we really need.

Even after deciding on what coverage we really want, we must keep in mind the necessity to avoid adverse impacts to initiatives designed to meet other management objectives. The renegotiations I mentioned earlier, for example, will likely be conducted in a sole source environment; any potential benefits of competition will be lost. Our efforts to increase competition by purchasing subsystems and components of weapon systems, as well as spare parts, from contractors other than the original equipment manufacturer will be impaired. We do not want competition in these areas reduced, and we must ensure that this competition would not void a warranty from a prime contractor. There is clearly a trade-off here, which must be considered carefully.

We also have to be careful that in seeking written guarantees on our weapon systems, we don't inadvertently reduce our supplier base, particularly at the vendor/subcontractor level. Section 794 would make it very difficult for small businesses to compete with major contractors who are better able to accept the risks involved. We have received several comments of this nature about small businesses.

Much has been made of DOD resistance to section 794; however, we have been proceeding on a steady, rational course, on December 16, the service secretaries received a general waiver as provided for in the legislation. It was essential to provide the services with a ninety-day waiver because, as I have explained, it was impossible to implement the legislation immediately. Moreover, time was needed for us to examine some basic policy issues which the legislation does not address directly, make decisions on them, and prepare guidance concerning implementation. Our objective has been to do so in a way which will facilitate the least disruptive application of

the warranty language in the shortest amount of time. We are continuing to work toward implementing guidance to coincide with the expiration of the waiver.

Draft DOD guidance has been completed and was published for comment from all interested parties. It is responsive to the basic provisions of section 794 and incorporates our best judgment on policy issues such as applicability, duration, and treatment of conditions which might void a warranty. I believe we "covered the waterfront" on the applicability question. All weapons systems from stratetic missiles to support equipment are addressed, and terms are carefully defined. We've allowed flexibility concerning the duration of the warranty based on the item being covered. Flexibility is also retained for negotiation of matters regarding conditions which may void a warranty.

Since the draft guidance was published in the Federal Register on January 20, we have received comments from industry and individuals. Some have been helpful, and will be incorporated into the final guidance which we expect to release prior to the end of the ninety day waiver period. Other comments confirm our view of the many issues raised by the legislation as currently worded. We have provided a copy of all comments received to congressional staff members.

SUMMARY

The use of warranties, guarantees, and performance incentives has, and will continue to be, one of the many strategies DOD uses in obtaining equipment in the most cost-effective manner. We want to be sure that the additional cost is worth it. Our ongoing use of these provisions at the subsystem level for individual performance parameters is somewhat different from using written guarantees at the prime contractor level for the entire weapon system for all performance requirements as required by the law. Again, we must try to focus on the most important charateristics of our systems, since we can't afford, and probably don't need to guarantee everything. I believe section 794 needs to be redrafted so as to be more flexible if we are to achieve our mutual objective of providing the best equipment for our Armed Forces in a timely manner at the lowest possible cost to the taxpayer. We must take great care that the warranty cost is not in excess of the benefits to be gained.

We must allow for an orderly, reasoned approach such as we have found effective in the past, while at the same time broadening the use of performance guarantees and warranties. We must be sure that the characteristics of weapon systems which we require contractors to guarantee are essential, measurable, and traceable. All of our experience suggests that detailed analysis and selective application are necessary to have an effective product incentive provision.

We are anxious to build on our experience; warranties, guarantees and performance incentives are valuable in the proper environment. An alternative approach to the present legislation would be to substitute legislation which requires the Secretary of Defense to issue regulations for cost-effective implementation of warranties in a tailored, carefully constructed manner which would apply to material and workmanship warranties, performance guarantees, and other system and subsystem incentive provisions, this would improve the quality, operability, reliability, and maintainability of DOD weapon systems while remaining responsive to the concerns of the Congress and the taxpayers as well as the dictates of good management.

I am confident that if directed by Congress to do so we can draft appropriate regulations, thoroughly coordinated within the Department of Defense (DOD), which address our shared concerns over the quality of the products we procure. The policy guidance DOD published in the Federal Register reflects our wish to be consistent with section 794 of the fiscal year 1984 DOD Appropriation Act—it is not an independent view of how we would wish to do it if given general guidance and a measure of latitude.

Chairman TOWER. Thank you, Dr. DeLauer.

Admiral White?

STATEMENT OF ADM. STEVEN A. WHITE, U.S. NAVY, CHIEF OF NAVAL MATERIEL

Admiral WHITE. Mr. Chairman, I would like to provide my statement for the record. If I may, I would like to very briefly summarize the Navy's position.

The Navy supports a strong and fair warranty program. The Navy has proposed changes to the defense acquisition regulation to

implement section 794. It is the Navy's position, concurred in by our Navy general counsel, that these changes to the DAR will bring us into compliance with the act.

These changes relate largely to the application of current DAR policies to weapon systems contracts. All Navy contracting activities have been directed to follow this policy after March 14 of this year.

The Navy has quite a bit of experience in using warranties. In fact, last year two-thirds of Navy procurement dollars, and that is about $20 billion, were spent under contracts that contained warranties.

For example, we require warranties in all production contracts for shipbuilding, airframes, aircraft engines as well as in ship repair contracts.

In the past the Navy has had these warranties in component contracts when the costs were determined to be justified. Warranty provisions are contained in current contracts at this moment, current contracts for 68 surface ships and 26 submarines.

In addition, many hundreds of other ships were constructed under contracts with warranty provisions.

In the case of aircraft, we have over 1,200 aircraft again presently under contract with warranties.

In addition, we have large numbers of engines, missiles and other equipment under warranty.

However, because of the new law, there is a vast number of contract actions that will now require warranties that were not previously covered by warranty provisions.

The Navy recognizes that warranties are commonplace in the commercial sector and that they are used as a marketing factor in many industries. But we also realize the cost of warranty liability is included in the sales price of these items.

I must make clear that warranties are not in themselves the cure for poor performance or poor quality.

A principal value to the Navy of a warranty comes from the added care and attention exercised by industry on the manufacturing shop floor. Readiness of our forces is of key importance and we want to get high quality material to the fleet.

In a perfect world where there is perfect quality control we would not need warranties. Unfortunately, this is not the case and we know that warranties make good business sense.

As I have mentioned, the Navy has been obtaining warranties in a wide range of contracts.

Now, full implementation of section 794 will not be without problems. For example, we must strengthen our programs to enforce warranties and accurately assign responsibility, a key factor in any warranty.

We must deal with workload and personnel resource impacts which will come about because of the many new warranties we will have to negotiate and administer. There can be no let up in our efforts to emphasize the need for discipline in attaining high quality design in manufacturing.

We will need to establish and implement a warranty historical data base for those $10 billion of items not currently under warranty.

As you recall, I said two-thirds or $20 billion is under warranty. We will need the historical base on the other $10 billion so that we can support future negotiations at fair and reasonable cost and to ensure proper selection of warranty duration.

In summary, the Navy believes that minor changes to the DAR are required to implement the act, that while there will be problems with the implementation, we support the principle of warranties.

I will be pleased to respond to any questions.

[The prepared statement of Admiral White follows:]

PREPARED STATEMENT OF STEVEN A. WHITE, U.S. NAVY, CHIEF OF NAVAL MATERIEL

It is a pleasure to appear before your committee today to discuss Department of the Navy implementation of section 794 of the fiscal year 1984 DOD Appropriation Act.

The Navy supports a strong and fair warranty program. Our experience has shown warranties to be one of several means to incentivize quality design and manufacture. The Defense Acquisition Regulation, prior to passage of the law, encouraged the use of warranties on a case by case basis; the Act now requires warranties in weapon system production contracts. We have proposed changes to the Regulation to implement the Act. These changes would remove the Contracting Officers' discretion regarding warranties in all fixed price type contracts for the production of weapon systems and components. Higher level approval would be required not to use a warrantly in these contracts. Cost reimbursement type contracts would continue to include the "Inspection of Supplies and Correction of Defects" clause. All Navy contracting activities have been directed to follow this policy in all contracts awarded after March 14, 1984, the expiration date of the waiver granted by Deputy Secretary of Defense.

American consumers purchase a wide variety of commercial products every day. Many of these products carry some sort of warranty or guarantee. In many cases the type of warranty may be a factor in product selection. Each of us has shopped for an automobile or refrigerator and probably looked at the warranty coverage before making our final decision. Companies realize that warranties are a marketing factor and they must offer them if they are to remain competitive. I am sure all of us would be surprised if the salesperson told us that the new car we were thinking about buying came without any warranty at all. On the other hand, I do not think that the majority of consumers realize that the price of the product includes some amount for the warranty. We are used to being offered a supplemental warranty or extended service plan which has a price tag associated with it, but few of us are aware that the base price of the car or refrigerator has some amount included in the price for that initial warranty. The balance sheets for major corporations that produce consumer products such as appliances and automobiles, show dollar figures for liabilities which includes the potential cost of repair for defects covered by warranties. The small print of the footnotes contains a few words which confirm that contingencies for warranties are included. One such footnote states that "provisions for estimated costs related to product warranty are made at the time the products are sold". The amount set aside is included in the sale price of the product and is, in turn, included in the Cost of Sales. The amount to be paid out for repairs under the product warranty for the current year will be one of several items in the Accrued Liabilities account. For expected pay out beyond the current year, the amount will be one of several items in the Other Liabilities account.

Congress appropriated almost $31 billion in fiscal year 1984 for procurement of Navy weapons systems and components managed by activities under my command. We have historically been successful in obtaining meaningful written warranties on all ships, from aircraft carriers to oilers; all airframes, from fighters to trainer helicopters; all aircraft engines; and all ship repair contracts. Also we have been successful in obtaining warranties on some electronic countermeasures equipment, missiles, electronic altimeters, tactical computers, radios and auxiliary power units. This list is not all inclusive but as you can see even without the Act I have obtained written warranties in contracts representing approximately ⅔ of the procurement funds for the Navy. This will increase substantially under the Act.

The Navy has contracts with warranties on 68 surface ships, 26 submarines, 1203 aircraft and 1147 aircraft engines and 511 Harpoon missiles. I would like to cite some specific examples. To date we have 54 *Oliver Hazard Perry* class FFG's under

contract of which 39 have been delivered. For each ship at the completion of construction, and after successful builders and preliminary acceptance trials, we preliminary accept the ship and commission her. For the 9 months following, the contractor is required to correct any and all contractor responsible defects. The contractor's Guarantee Engineer, riding the ship, is notified of the defects and he directs their correction by his personnel or by subcontract. At the completion of the Post Shakedown Availability all identified defects must be corrected at no increase in contract price, or the contract price is rendered for uncorrected defects.

The second example is our airframe warranty. The current F/A-18 contract requires the contractor to correct all defects discovered during the 6 months following preliminary acceptance of each aircraft. At the time of delivery of each aircraft all known deficiencies are listed on the acceptance document and a withholding of funds is established pending correction of these defects. Upon correction of the defects withholding is released. The contractor is required to correct these defects or an appropriate reduction in contract price is made. Subsequent defects discovered within the warranty period are identified to the contractor. Should all defects not be corrected then an appropriate reduction in contract price is made.

The Navy is also securing warranties on components. For the AN/UYK 43 computer the contractor warrants that for two years after delivery of each item under the contract the items will be free from defects in material and workmanship and will conform with the specifications and all other requirements of the contract. In the event of a deficiency, the Navy, at no increase in contract price, may require the contractor to repair or replace the item. In addition, the contractor is also required to furnish data and reports applicable to correction of the defect at no increase in contract price.

I do not want to give you the impression that I can implement the new law without some problems. Just as the price for commercial products include prices for warranties, warranties on weapons systems and components will carry additional cost. In each case where a warranty is negotiated, I intend to look carefully at the cost to ensure that it is cost effective. A $100 warranty on a 5-cent item makes no sense. While section 794 recognizes that situation, I will be doing a lot more negotiating, cost estimating and analyzing which will either require additional people or add to the leadtime for acquisition. In the short term for the remainder of fiscal year 1984 I will be assessing the impact on negotiations of the mandatory requirement for a warranty. In the long term, I am looking hard at the Acquisition Strategies to ensure that the warranty issue is taken into account from cost, schedule and performance aspects very early in the planning process. In short, I am getting the message out to my contracting officers and business managers to implement the law.

We know that warranties involve sharing risks by both the buyer and seller. The buyer shares the cost risk in the contract price for inadequate product performance. The seller bears the risk that the cost of correcting inadequate product performance will exceed the priced amount. Inadequate product performance can normally be traced to a poor design, improper manufacturing or both. Where there is a lack of discipline in the design and manufacturing processes, understanding the amount of risk to be negotiated becomes difficult. Our approach then is the disciplined application of design and manufacturing fundamentals which results in equipment conforming to the performance specifications. The Navy has been pursuing this approach. For example, we have been successful with the Inertial Navigation System (INS) for the F/A-18 aircraft, MK 46 torpedeo, F-404 engine, Harpoon Missile and the SPS 49 Radar. I am taking the initiative with Navy contractors to require use of those design and manufacturing disciplines that will directly increase the reliability of Navy equipment.

We foresee a number of issues we will be resolving as we implement the Act. As we extend warranties to many components programs, we will be working to gather the historical data we need on system and component performance to negotiate a fair and reasonable price that includes the warranty obligation. After all, the cost of the warranty reflects the seller's and the buyer's confidence in the reliability of the equipment. When we are too optimistic in our pricing we will have provided another basis for litigious contractors to assert claims. We will also be working to ensure that the duration of the warranty is commensurate with the expected usage of the equipment required under the contract. Where equipment is purchased for installation in a ship under construction, for example, the warranty should take into account the time between equipment delivery to the shipyard and ship commissioning which may be as along as 3 years.

Naturally we are reviewing our specifications to ensure that the warranted performance requirements are understood by all parties. In this connection, we believe the specification requirements in cost reimbursement and incentive priced contracts

to be subordinate to the fundamental payment and performance obligations of the contracting parties. The cost reimbursement type contract, even in production, is used only when the uncertainties of performance are so great that the cost cannot be estimated sufficiently to fix a price. The contractor's obligation to perform the contract is limited by the Government's willingness to provide funds to complete performance. In this context a warranty must be similarly limited or the specification can be considered to be more than a goal or objective that a contractor uses its best efforts to achieve. We can reduce the reliance on cost reimbursement type contracts for production, even limited production, by making the proof of producibility (to production standards and rates) an integral part of the development program.

In conclusion, the use of warranties in Navy contracts is not new. I believe Navy's current warranty program is sound.

Mr. Chairman I will pleased to answer any questions that you or the committee may have.

Chairman TOWER. Thank you, Admiral.

General Babers?

STATEMENT OF LT. GEN. DONALD BABERS, DEPUTY COMMANDING GENERAL FOR MATERIEL READINESS, U.S. ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND (DARCOM)

General BABERS. Sir, I will line up in total support of the warranty law. I would like to see greater flexibility in its implementation. I think Dr. DeLauer has spoken to that.

The law and your hearings on this give us a leverage we have not enjoyed in some time. I think with your backing, what has come out in the law will give us more power at the table when we go face to face with industry.

There is no doubt in my mind we will reap some benefits from that. There is no doubt in my mind that everybody here understands that in a competitive environment where we are buying something for the first time or second time we stand a much better chance of getting a warranty with the best possible terms.

I think you know that we focus here on weapon systems, new weapon systems. I am here to tell you we are going to be buying components for these new systems for 10 to 20 years from now, we are going to be buying against technical data base packages that were developed by engineers in the industry under contract with the Government. We control that technical data package.

The problems highlighted by Senator Goldwater are inherent in that fact. For 20 years we are going to be buying components and parts to maintain the weapon systems that are being developed and fielded today against technical data packages for which we have cognizance, but industry made a big contribution in putting those together.

I guess only time will tell, but I have a great concern. We have some end item components like radios and printed circuit boards that are made against Government drawings by any one of three or four different small business firms.

The firms I am talking about have great concern that once a tank containing their product, or once a Bradley or an aircraft gets to Europe or to Korea and breaks down, that they will not have the administrative staff necessary to track the flow of that hardware and engineers to make the technical judgment as to whether the breakdown was due to fair wear and tear or not.

It causes concern. It is their concern. I think we have to be sympathetic to that.

We do a good job, I think, of making sure that systems that go into production meet our requirements. We have correctional deficiency clauses.

Our concern is not what rolls out of the factory. Our concern is what happens in Korea for example 8 months or 24 months later.

In the United States if you are talking commerical product, you have a network of dealers, so that when something breaks, you take it down to Sears or down to General Motors and it can be accommodated.

One of our divisions today has literally hundreds and hundreds of pieces of equipment covered by warranties with different terms. There are no dealerships in Korea and Germany for most of the components that go on our combat vehicles and aircraft. The pipeline gets to be very long then in terms of evacuating those back to the Conus base for repair.

Certainly we need a mechanism, if we are to make this an effective law, that will allow us to make the judgment to repair it on site and send the bill back.

Our challenge is to make this as transparent as we can to the user.

We have had good and bad experience with warranties in the past 20 years, just like everybody that deals with industry, whether it is for toasters or tractors. Some people have good relationships and with others it depends on the personalities there.

In our environment there is a lot of administration associated with it, by the soldiers in the field and by commodity commands and by industry. We have to tighten up our act. We are committed to do so.

Our Chief of Staff and the entire staff are behind this. We hope again that you will see fit to cause it to be a little more flexible than the way we read this to be at present.

Thank you, sir.

[The prepared statement of General Babers follows:]

PREPARED STATEMENT BY LT. GEN. DONALD M. BABERS, DEPUTY COMMANDING GENERAL FOR MATERIEL READINESS, U.S. ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND

Mr. Chairman, and members of the committee: I appreciate the opportunity to discuss Army warranties and the implications of the new law. We share your basic objective of fielding quality equipment that meets our national security needs. The Army strongly advocates the use of warranties and other product performance agreements to hold contractors responsibile for the product that they manufacture.

Most of our warranty experience has been with the application of the provisions of DAR 1-324 to commercial items at both the end item and component levels such as construction and materials handling equipment, commercial vehicles, generators, test equipment, storage batteries, engines and transmissions. A recent count shows that the Army has over 500 contracts with warranties of one type or another. Over 200 of these are in the automotive area. During the past several years we have begun to expand the use of warranties to uniquely military items. Currently the Army has over 100 contracts with warranties for ammunition metal parts. We have also initiated expanded warranty protection beyond the type covered by the DAR 1-324. For example, reliability improvement warranties have been used successfully to enhance the performance and reliability characteristics of selected military items. In addition to the Blackhawk helicopter's T-700 engine, the lightweight Doppler naviagtion system and the navigational receiving set identified by Senator Andrews in last year's session, other systems such as the target acquisition detection system, pilot night vision sensor and nap-of-the-earth high frequency radio are also covered by reliability improvement warranties. We believe these applications have been

very beneficial and want to continue to expand their use. Correction of deficiencies provisions have been used to require the contractor to correct, during the specified period of time, any conditions or characteristics in the supplies discovered which do not comply with the requirements of the contract. One example is the Army contract for the Sgt. York weapon system which requires the contractor to guarantee that the system meets the design requirements for performance and reliability. The Army will conduct a comprehensive test of several systems to demonstrate that they meet all of the contract performance requirements. If deficiencies are found, the contractor is required, at no additional cost to the Army, to correct all deficiencies on delivered systems and to correct the design for future production. The contractor is also required to correct all deficiencies discovered by the government or contractor within 180 days after acceptance of the respective supplies by the government.

I would now like to address two main points: One, the new requirements that the act imposes on the materiel developer; and two, the impact of an expanded program on the field. First, in the materiel development process, guarantees must now be included in all production contracts for weapon systems, whereas previously they were selectively applied. Both commercial and uniquely military items are included.

Such a broad application of guarantees will mean an up-front increase in acquisition and support costs and leadtimes. We are not in a position to quantify these at this time, but we feel that they will be significant since the guarantee mandated by the act must be for both the system and each component.

Our breakout programs will be affected to the degree that prime contractors attempt to retain control of spare parts and components in order to maintain the integrity of the system for the application of the system guarantee in the field. Currently, 80% of our procurement actions are placed with small business firms, but less breakout will mean less opportunity for competition and small business participation. Further, the Act requires that the system design itself be guaranteed. We are concerned about our ability to obtain additional sources for items when a potential bidder would have to warrant the government's design. One example is large caliber ammunition where the Army is the design activity. The act also requires that contractors now guarantee that the design, manufacture, materials and workmanship all meet performance requirements, whereas previously, the contractor was normally required to meet only design specifications contained in the technical data package. Many of our contractors perceive this change to be a substantial increase in risk. This perception is likely to reduce our ability to obtain competition.

In addition, the Act's guarantee requirement applies to priced options in existing contracts which are to be exercised after the 14th of March. This requirement will prevent the government from exercising its rights under those options.

The Army operates an extensive product assurance program to assure that contractors comply with the contractual requirements and to ensure that the soldier is furnished materiel that meets performance and reliability requirements. We believe this effort is in line with the requirement that the contractor guarantee performance demonstrated by competent testing during the design and early production phases. During development the contractor designs the product to meet contract performance and reliability requirements. Substantial development and operational tests are conducted to validate the designs. During the initial production phases of major weapon systems development, the Army requires that the contractor demonstrate the system meets performance and reliability requirements. When deficiencies occur the contractor is required to correct them by changing the design and to retrofit all units that were accepted prior to completion of the test.

For example, on the M1 Abrams tank system during the development and initial production phase, over 200,000 miles of testing in a variety of test conditions was accomplished with substantial quantities of ammunition being expended. As a result of the testing and the correction of deficiencies by the contractor, the M1 satisfies all performance and reliability requirements.

With respect to production the Army continues a testing program to assure that hardware meets contract requirements. For example, most of our missile systems contracts include a "fly before buy" lot by lot sampling requirement. Contractors are required to demonstrate that missiles meet performance requirements or they are required to fix the lot before the government will accept it.

We conduct similar production testing of major systems such as vehicles, radars, weapons and aircraft. Our product assurance and test efforts are tailored to the specified commodities and associated risks, and we currently rely on this effort to provide protection to the soldier in the field.

My second point concerns the impact of warranties on the soldier in the field. The Army today has a mechanism for managing warranties in the user community, or field army. It's not without fault. As I am sure you recognize, the success of any

warranty program is highly dependent on the soldier—his is the user of the equipment. When it breaks or fails to operate, he must make the decision—do I repair? Is it under warranty? Who will fix it? Where must I go? Can I afford the downtime? This is the area on which our efforts must be concentrated if we are to have a successful program. Keeping in mind that readiness is paramount, we must provide the soldier with better mechanisms and tools to make an expanded warranty program work, be credible, and be cost effective. As mentioned earlier, warranties are not new to the field soldier. As a matter of fact the Army is currently purchasing about 58,000 commercial utility cargo vehicles (CUCV); in essence a General Motors commercial pick up truck with a 12 month/24,000 mile warranty provision. This is similar to the warranty you purchase on your personal automobile. As good as these arrangements are, however, they still don't meet the literal requirements of section 794 of the appropriations act in terms of performance warranties. In this case, we got a standard warranty that any commercial buyer would have gotten. You take your car to the local dealer to have a problem corrected. We will do the same, but because of worldwide distribution, our process becomes more complicated. General Motors, of course, is worldwide. However, when we distribute hundreds of vehicles to a post, geographic access and the workload placed on a specific dealer could be overwhelming. It will require intensive management. The process becomes even more complicated when warranties are applied to military developed hardware since dealers are not available worldwide.

This can become a multi-dimensional issue where a number of individual component warranties exist on a single end item. That is, separate component warranties could require the solider to deal with multiple vendors. The warranty program must be structured to function in the framework of our existing supply and maintenance system and be transparent to the solider. We must work to reduce the burden of the soldier.

The warranty will require us to expand our data management systems and seek retrieval methods to measure improvements in reliability, maintainability, and readiness of warranted items. It will also increase the burden of having soliders fill out more forms and inputting data. To help reduce this burden, we must expand—indeed, even redirect—the day-to-day activities of our field service representatives. This will, however, affect our ability to provide hands-on training and other readiness support.

In summary, the Army has experience with warranties in acquisitions of commercial items and system components. Given the extent of our experience there is concern regarding the across the board application of the act to all weapon systems acquisitions at one time. Therefore, additional flexibility regarding application of the act is necessary. This could be accomplished by a phased implementation, by application only at certain dollar thresholds, or by application only to selected acquisitions. Further, it is recommended that the act not apply to priced options in existing contracts. The ultimate result of the act must provide an increase in the reliability and quality of our fielded equipment.

Chairman TOWER. Thank you, General.

General Stansberry?

STATEMENT OF LT. GEN. JAMES STANSBERRY, U.S. AIR FORCE, COMMANDER, ELECTRONIC SYSTEMS DIVISION, AIR FORCE SYSTEMS COMMAND

General STANSBERRY. It is a great honor to be here representing the Air Force today.

I am Commander of the Electronic Systems Division of the Air Force Systems Command. My day-to-day responsibilities include acquiring new electronic systems for our defense, for the Air Force and to some degree for the other services.

My personal background on warranties includes some extensive involvement during the seventies working with Gen. George Brown, then commander, Air Force Systems Command. He got people together and we debated how to do a better job using commercial type warranties on defense goods.

Out of that effort known as Project ACE, came a lot of push on the use of reliability improvement warranties.

Later on working in 1978 for the then commander, Air Force Systems Command, Gen. Al Slay, known well to this committee, he commissioned me to set up a group of industry and military officials to look at ways to develop and implement better warranty forms and push the application of warranties in a reasonable, sensible and businesslike way on defense goods.

T. Wilson offered to furnish a deputy chairman for that group. In fact, as I recall, it was T's idea in the first place. We had several very successful meetings involving both Air Force Systems Command and Logistics Command, and several contractors. Out of this we produced a Product Performance Agreement guide which has proved very useful to our people negotiating warranties. A very important principle came out of that, one which has been mentioned several times this morning.

If you are going to get warranties, in fact, if you are going to get anything at all, it is better to try to get it in competition.

A friend of mine, Maj. Gen. John Hepfer, has said from time to time, perhaps before this committee, "one competition is worth ten *should* cost studies." That certainly applies to the line of work I am in and specifically to warranties.

A second principle is if you are going to use warranties on a major system, you will have to identify your requirements right from the start. You want to think the thing through very early in its design. You can't wait until the tail end and think you are going to put some words on a piece of paper that will make a system designed years ago work any better than it is going to work. You might end up with nothing but a pre-price-maintenance contract. If that is the case you ought to wait to see how it's going to work and not pre-price it.

The third important principle I have learned is that warranty provisions must be very carefully tailored to the technology, to the product, to the goal, and that every deal is sure enough different.

Since that time and, in fact, during those years we have developed a number of warranty tools that we applied to our contracts, some of which were delineated by Dr. DeLauer.

We have the simplest tools, the inspection clause that goes on practically everything and says that the thing has to be free from defects, in materials and workmanship.

We have the correction of deficiencies clause.

We have life cycle cost guarantees.

We have mean time between failure guarantees.

We have mean time between repairs guarantees.

We have availability guarantees and others.

One of the most powerful tools that we have was mentioned by Senator Andrews this morning and that is the use of past performance in source selection.

As the source selection authority, myself, for 12 major acquisitions during this past year, I can guarantee you that the past performance of a contractor in fielding reliable goods is one of the heaviest things on my mind when I am trying to make up my mind as to who gets the contracts.

How has our experience been in application of all these tools? It has generally been quite good. One recent example—a long-range radar which we are just now putting into production.

We were shooting for an operational availability of about 1,000 hours between breakdowns. Right now we think we are going to get about 1,500 hours. Now, a simple correction of deficiency clause is on that contract.

On other contracts we have very complex guarantees and warranties. It really depends on what you are buying and the maturity of the technology and what you are after.

A simple example that comes to mind, I think, was an important lesson to me. I had a foreign car and the engine blew up at 11,500 miles. I said, "Boy, am I lucky. I have a 12,000-mile guarantee."

Sure enough, I got the engine replaced, but I had to wait 8 weeks. I would have been better off if I had had an availability guarantee.

Tailoring the warranty to the product is crucial. You must be able to measure what you are after if you are going to get a good warranty.

How much do these warranties cost? We don't know for sure overall. That is one of the reasons that we have established at Wright-Patterson Air Force Base a Product Performance Agreement Center. We have 10 people working that problem now, 5 military, and 5 contractor.

We are gathering data on all the warranties and guarantees we have to see how they work. We are trying to learn better how to use the tools that are in the bag and develop new tools, train our program directors on how to go about it so that they can make reasonably good business deals.

I might say that, in my opinion, for all of our warranties and guarantees that we have today that I am responsible for, I don't think a single one of them meets the new law and yet I think they work quite well.

What am I after? What do I believe is right? I think that in the acquisition business we need the freedom and the flexibility to tailor the type of guarantee or warranty that we put on contracts to the job at hand and not use any single provision, not any blanket provision that covers everything.

We are very proud of this alternative fighter engine warranty that was just negotiated in competition. I have read the whole thing. I think it is a superb warranty. It is very complex and difficult to negotiate.

The interest of both parties is protected. If another engine was to come up tomorrow for warranty, I guarantee you that probably wouldn't be the right warranty for the new engine. There would be differences.

We need the freedom to address those differences.

Now, some testimony has indicated that we have the freedom because we can use the waiver process. I think with the law as written, we would be forwarding several hundred waivers a year up to Dr. DeLauer and the Secretary and over to the Congress.

Right now, for the warranties and guarantees we have we have not fully complied with section 794. We are certainly going to comply with the law. I believe that with the law, as written, we would slow down the acquisition process which already takes much too long, and it would be expensive in terms of time and resources.

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I should like to close by saying that I don't think anybody in the Air Force is more enthusiastic than I am about the application of warranties and guarantees to defense purchases.

I would like to see the law accommodate the flexibility, to tailor our tools to the job we have to do.

Thank you very much.

[The prepared statement of Gen. James W. Stansberry follows:]

PREPARED STATEMENT OF LT. GEN. JAMES W. STANSBERRY, COMMANDER, ELECTRONIC SYSTEMS DIVISION, AIR FORCE SYSTEMS COMMAND

Mr. Chairman and members of the committee: I am pleased to appear here today to testify before your committee. I have a prepared statement which presents my views on section 794 of the Department of Defense Appropriations Act, 1984. In my present position as Commander, Electronic Systems Division (ESD), which I have held since 1981, I work directly for the Commander, Air Force Systems Command and am responsible for acquisition of Command, Control, Communication, and Intelligence (C^3I) systems. These systems are acquired for the Air Force, in many cases for other services, and for foreign military sales customers. In my 35 years of military service, I have also served extensively in procurement policy and management positions, most recently as the Deputy Chief of Staff, Contracting and Manufacturing, Air Force Systems Command.

As Commander of a major systems acquisition division of the Air Force Systems Command, I have many concerns about the workability and possible unintended consequences of implementation of section 794 within the complex contest of the overall systems acquisition progress. I believe these concerns are representative of those throughout the Air Force acquisition community. However, in expressing these concerns, I want to make it clear that we applaud the underlying intent of section 794, and fully support the need to insist that defense systems when developed, produced, and deployed must work as promised and must be affordable both in acquisition cost and in total systems support cost.

I believe that the systems fielded by the Air Force today, when properly supported and maintained, generally work very well and provide for forces, and the forces of other friendly nations, with extremely effective fighting capabilities. However, the Air Force is certainly not complacent and is clearly committed to a continuing search for better ways to conduct our acquisition and support processes.

My own commitment to improving our ability to acquire affordable systems that meet our operational needs and work as advertised is now new. It has been reflected in my participation in a variety of legislative, policy, and management initiatives intended to make the system acquisition process more responsible, more efficient, and more affordable.

One of these initiatives, known as Profit '76, recognized that the then-current weighted guidelines approach to negotiating profit actually discouraged contractor investment in modern, efficient facilities and equipment. I believe then, as I believe now, that such equipment is one key not only to lower prices, but to fielding higher quality, more reliable systems. In order to at least make a start toward reversing this negative incentive, we substantially revised the weighted guidelines and recognized facilities cost of capital in computing the Government's profit negotiation objective.

Another was a set of Air Force Systems Command management initiatives, published in 1978 as Commander's Policy 550–22 on Contracting Practices. These initiatives shocked many in both Government and industry by their bold emphasis on competition, fixed price contracts, and insistence on contractor accountability for cost and performance. The one most relevant to today's topic read as follows:

"Structure contract terms, conditions, and incentives to reward good performance and penalize poor work. Contractors willing to invest in productivity and price reduction should be rewarded with increased profit. Contractors should be held rigorously to the terms of the contract. Past performance will be considered along with technical, cost, and schedule considerations when selecting contractors for future effort."

In recognition that better guidance was essential to provide appropriate, tailored Product Performance Agreements (or warranties) in Air Force system acquisitions, we developed the Air Force Product Performance Agreement Guide published jointly by Air Force Systems Command and Air Force Logistics Command in August 1980. In addition, we proposed the establishment of a Product Performance Agreement Center for the Air Force. This center was established in 1982 to provide staff

assistance, analysis, experience data, and improved policies, procedures, and contract clauses to enhance the Air Force's use of Product Performance Agreements.

Also, I was deeply involved in the testimony provided in 1980 by General Alton B. Slay, then Commander of Air Force Systems Command, concerning the defense industrial base, critical defense materials, and the need for a new and expanded concept of multiyear procurement to encourage program stability and efficiency in the systems acquisition process. Program stability and Government commitment to continue production over several years contribute to economic ordering of components, improved labor learning, and investment in better equipment and tooling, all of which can contribute to fielding more affordable and higher quality systems.

As part of the effort to ensure that contractors are held accountable for their technical, schedule, and cost performance, I have strongly emphasized contractor past performance in my role as source selection authority for many Electronic Systems Division programs. I can assure you that contractors that compete for ESD programs know that we will examine their records of meeting technical, schedule, and cost requirements and will take them heavily into account in selecting the winner.

Recognizing that changes to profit policy have not been sufficient to motivate contractor investment in the most modern, efficient equipment, I have initiated innovative incentive sharing arrangements with Westinghouse and other contractors under an ESD program we call "GET PRICE" (Productivity Realized Through Incentivizing Contractor Efficiency). These initiatives, now under the umbrella of the DOD Industrial Modernization Incentives Program, make it possible for a defense contractor to earn a competitive rate of return on investment in modern efficient production equipment and processes for DOD programs. This initiative has indeed resulted in increased investments and savings.

I am not citing these past and current initiatives in order to take personal credit. I will retire this July and have nothing to gain at this point. However, as an acquisition professional over many years, I believe that I have learned some lessons concerning the gap that can occur between the goodness of intent in a statute or policy and the progress that can be expected in the near term. I have also learned that there is high potential for adverse unintended consequences when the implementing actions by the Government and contractor both at the managerial and working level are not carefully planned. Unless statutory or policy initiatives provide clear rules, proper training, and sound integration with the existing overall acquisition process, progress will be slow and ways to suboptimize on the current thrust to the detriment of the overall process will abound.

We in the Air Force are sincerely concerned that the excellent intent of section 794 to ensure that production weapon systems meet all Government performance requirements and are free from defects in materials and workmanship may not be achieved at an affordable price by blanket application of section 794 to all system. As we understand the Appropriations Act provision, it establishes a strengthened, statutory "correction of deficiencies" approach as the single best way to ensure that performance requirements are met. This requirement overlays the variety of other incentive arrangements and product performance agreement approaches available to the Government in structuring an integrated total acquisition strategy and negotiating the overall contractual arrangements.

While we recognized that paragraph (c) of section 794 provides for waiver by the Secretary of Defense in the interest of national defense or because the guarantee requirements would not be cost-effective, it also requires written notification to this committee, as well as three other congressional committees, of the intent to waive such requirements, along with an explanation of the reasons.

It is clear that this provision is intended to strongly discourage complete, and presumably also partial, waivers. While it is not clear either when, or in what manner, the various committees may react to such a notification, in my opinion the likely effect is to "place the committees at the negotiation table" with the Government and contractor negotiators until such time as the congressional reaction and the impact, if any, on support for and funding of the system are known. This is likely to delay the contracting process and further contribute to the complexity of negotiations and to the continuing erosion of the authority of the contracting officer and program manager, which Executive Order 12352 and the Defense Acquisition Improvement Program are seeking to reverse.

There are two reasons that I characterized the requirements of section 794 as a strengthened, statutory correction of deficiencies approach. First, while not identical and apparently less flexible, the guarantees required by section 794 most closely approximate the current Defense Acquisition Regulation (DAR) clause at DAR 7-105.7(c), Correction of Deficiencies. Second, Senator Andrews has stated in a letter

to the Deputy Undersecretary of Defense, Acquisition Management, on January 19, 1984, that the fundamental objective was to enforce by law many of the warranty provisions in DAR 1-324, to assure that weapons work as intended.

Clearly there are many systems and subsystems for which a correction of deficiencies approach to warranties is an appropriate and cost-effective technique. The DAR clause with its various alternate provisions has been used extensively by the Air Force in many system and subsystem contracts. While the clause is not perfect, either in its wording or effect, it does serve as one of the many factors motivating the contractor to produce a product that will not only pass production acceptance testing, but also perform properly when fielded in operational use.

The tailoring of the clause to a specific system contract has been, and in our view should continue to be, a matter for negotiation. It is most useful when it—

Is properly matched to the maturity of the system design and technology;

Allocates the cost of correction in a manner consistent with the contract type selected for the production contract;

Considers the number, distance, and certainty of the sites at which the system will be deployed;

Is limited to a reasonable time after delivery of each unit or of all units under the contract;

Takes into account whether the Government has alternate contractor or in-house resources to correct deficiencies, and if it does not, requires the contractor to correct them whether or not it agrees that it is responsible; and

Considers the most cost-effective arrangement for both the Government and the contractor in allocating responsibility for disassembly and reassembly, as well as responsibility for transportation cost.

In general, this approach works well and involves only modest cost when both a contractor (or contractors) and the Government are convinced from the results of full-scale development and test, or from experience with like technology, components, and similar designs, that an adequate, producible design exists that will meet the performance requirements.

In other situations the application of a correction of deficiencies approach to the entire system and all of its components may not be the best approach. This may be the case where the Government elects to have substantial concurrency between development and production in order to meet an operational need or when specific elements of an otherwise mature design are known to involve substantial risk or to require substantial changes or improvements during initial production. In such cases a warranty for correction of deficiencies may be too risky or too expensive at the total system level or require tailoring to correct only defects in materials and workmanship below the system level.

When certain components need to be the specific focus of continuing, long term improvement efforts to increase reliability, availability or other elements of operational readiness, other forms of product assurance agreements or specific preplanned product improvement efforts may need to be carefully planned from the beginning of development and applied to selected subsystems, black boxes, or other components.

Whatever level of technical, schedule, and cost risk exists at the time the Government makes a production decision represents total program risk. Well structured contract clauses, and appropriate selection of contract type can distribute that total program risk between the Government and the contractor in a manner that helps to motivate the contractor to better manage controllable risks through improvements in designs and processes.

Tailored Product Performance Agreements that are well planned as early as possible in the development process and implemented in production can be a significant motivator for continuing improvements. However, inducing the contractor to take on excessive risk—whether by law, policy, competition, or threat of program reduction or cancellation—does not necessarily further increase contractor motivation. It may result in risk adverse behavior that is not in the long term best interests of the program or in disputes and litigation that divert talent and energy from the cooperative team effort between the Government and the contractor that is essential for overall program success.

We in the Air Force are convinced that the literal and immediate implementation of section 794 across all systems is impractical and creates a substantial risk of significant delays in current programs and future financial and administrative burdens well beyond the desired benefits sought to be achieved.

As was discussed by the Chairman of this committee before section 794 was passed, there is a valid concern as to the effect that it may ultimately have on technological innovation and the use of the latest state-of-the-art technology in our sys-

tems. The time required for a mission need to be defined and funded, and for a system to be developed, produced, and deployed is already too long for a variety of reasons. If we set up a blanket requirement for contractors to accept all of the risk that a design can be produced from the outset to achieve all "specifically delineated performance requirements," we run the risk of contractors focusing their negotiations toward narrowly defined, easily achievable performance requirements, and attempting to define goals, rather than firm requirements, in production contracts. Once modest, unchallenging goals are set, they tend to become self-fulfilling prophesies. In addition, without the flexibility at the buying activity level to tailor guarantee requirements to changing needs, we may well face a reluctance to make needed improvements to performance or unrealistic proposals for equitable adjustments in guarantee costs where the change involves implementation risk. My contacts with contractors indicate that in attempting to evaluate the parameter of section 794, the one that they see as the most negotiable and offering the best opportunity to bound risk is the "specified performance requirements" to be included in the production contract.

We are also concerned about the potentially negative impact on small business participation in Department of Defense contracts. Unlike the small business that produces an item of its own proven design for commercial sale, many defense small business subcontractors produce to a design developed and controlled by the prime contractor, or a higher-tier subcontractor. We are concerned that prime contractors, in order to limit their risk under section 794, will be even further motivated than they are now to use larger, well established subcontractors with whom they have a long-term relationship and who have the financial capability to accept the flowdown of their portion of the prime's risk. While section 794 is not, in my opinion, clear as to the total scope of costs to be borne by the contractor for redesign, disassembly and reassembly, and transportation of parts to be repaired or replaced, one can envision that such costs could involve substantial risk for a small business supplier of a component. As a minimum, we believe that the entry of new small businesses and of small disadvantaged businesses into the defense subcontractor base will be impeded until both the risks inherent in section 794 and the prime's methods for dealing with those risks are better defined through policy and practice.

We are also concerned about the impact of section 794 on efforts by the Air Force to pursue component breakout and to increase competition for spares. While it is possible on a case-by-case basis to negotiate arrangements that permit the Government to replace parts in a guaranteed system with competitively procured or breakout parts or components over which the prime contractor has no control, such arrangements would require extensive negotiation by highly experienced personnel and complex and detailed methods of accountability and fault isolation. The problem may be limited on initial units if the length of the guarantees is relatively short; however, section 794 neither includes nor prohibits such time limits. Perhaps more importantly, its continuing requirements for guarantees on all follow-on production contracts could result in a dual approach in which some units required the prime contractor to have the first opportunity to repair or replace parts and bear the cost of all the work required, while other similar units would be past the guarantee period and subject to normal maintenance with new or repaired spares from stock.

To overlay on the Air Force Logistics Command and the operating commands a blanket requirement for guarantees of all systems and all of their components may require more training, personnel resources, sophisticated data and tracking systems, and changes to technical and maintenance manuals than can reasonably be accommodated, either in terms of budget or skilled manpower within the near term. Warranty administration problems were an important part of the Air Force reasoning behind selective application of Product Performance Agreements and our need to establish a Product Performance Agreement Center to provide data collection, analytical tools, and expertise on selective application of Product Performance Agreements to potential high-payoff subsystems and components.

The Air Force has long been a user and supporter of warranties. It was an Air Force initiative in the mid-60s which resulted in the development of the Correction of Deficiencies clause currently incorporated in the Defense Acquisition Regulation. The Air Force continues to tailor the correction of deficiencies clause to the specific program situation and makes extensive use of it in our contracts. Since then, we have continued to develop and implement even more sophisticated warranty provisions. Innovations such as reliability improvement warranties, mean-time between failure agreements, maintenance man hour/flight hour guarantees, satellite orbital incentives, and others have assured improved reliability and support for Air Force weapon systems. The latest developments are evident in such major programs as the

Alternate Fighter Engine and T-46 trainer aircraft. These programs represent excellent examples of the process of selecting systems whose technology and characteristics lend themselves to cost effective warranty coverage. They also enjoy the benefit of a wide base of related experience and the advantage of having been conceived and developed with a full understanding of the warranty provisions they would be required to meet.

Attached is a brief listing of examples of significant warranties currently on, or planned for, Air Force programs. In each case the key features of the warranty are summarized. These are complex arrangements arrived at through much effort and detailed negotiations even though they may appear simple and straightforward.

Mr. Chairman, let me respectfully state that in my opinion Section 794 is neither clear enough nor flexible enough to meet our needs. It is not clear in terms of the scope of systems included in the term "weapon systems;" could be interpreted to prevent even long-lead expenditures from the procurement appropriation before a fully satisfactory warranty has been negotiated; and it is inflexible in requiring both a design and manufacturing guarantee and a materials and workmanship guarantee (without resort to the waiver process) regardless of the maturity of design or with whom design responsibility resides. It seems to assume that the producer is always the designer. Its pre-established remedies are not clear as to the extent or duration of the contractor's potential liability.

Section 794 lacks the flexibility to recognize the very real need to be able to tailor our approach to warranties as part of the overall acquisition strategy for a program. We need the latitude to make informed judgments about whether a warranty is appropriate; what type of agreement is best suited to operational needs; and, whether the warranty should be applied at the system, subsystem or component level, or at some combination of levels. Mandating both the type of warranty and extent of application provides unnecessary restrictions and may not achieve the desired result of systems are affordable and work as promised.

I would like to close by expanding on one of my earlier observations. Modernization of contractor equipment and facilities is needed to improve the quality and reliability of our systems. We can accelerate that process by continuing to stabilize program requirements and provide economical production rates. Breaks in production, changes in requirements and low production rates all contributes to loss of learning and inefficiencies. These factors, in turn, contribute to workmanship and material problems that affect the quality of our systems. I believe if we provided stability and economic production rates, we could do more to improve quality, workmanship, and field performance than we could achieve with any contract clause or incentive arrangement.

Mr. Chairman, this concludes my prepared statement. I would be happy to answer questions.

Attachment.

- Examples of Significant Warranties Currently on Air Force Programs

  -- Carousel Inertial Navigation System (C-141, C-5, KC-135)

     --- RIW with MTBF guarantee of 1128 hours

         ---- Contractor repairs/replaces defective units to achieve specified MTBF performance

  -- AN/ARN-118 TACAN

     --- RIW with MTBF guarantee of 800 hours

         ---- Contractor repairs/replaces defective units to achieve specified MTBF performance

  -- AN/ARN-131 Omega Navigation Set

     --- RIW with MTBF guarantee of 4000 hours

         ---- Contractor repairs/replaces defective units to achieve specified MTBF performance

  -- DSCS II Satellite

     --- Orbital performance incentive

         ---- Negative incentive for less than 1 year of performance

         ---- No incentive for 2nd year of performance

         ---- Positive incentive for greater than 2 years of performance

  -- DSCS III Satellite

     --- Orbital performance incentive

         ---- Negative incentive for satellite lasting less than 4 years

         ---- Maximum negative incentive of $5M/spacecraft

  -- F-100 engines

     --- Contractor repairs/replaces any defect in materials/workmanship discovered within 8 months after engine installation provided engine is installed within 1 year after acceptance

Attachment 1

--- Contractor repairs/replaces any engine, module or accessory found unserviceable within 200 hours operating time or 2 years

--- Contractor warrants high pressure turbine in recent lots for 1350 tactical cycles or 42 months

--- Contractor warrants fan disk in recent lots for 3000 tactical cycles or 10 years

-- KC-10 Tanker/Cargo Aircraft

--- Commercial warranty on airframe, avionics and engine serviceability

---- Design and workmanship for 2 years

---- Materials free from defects for 5 years or 5000 hours

-- Air Force Standard Inertial Navigation Unit (F-16/A-10)

--- Reliability improvement warranty

---- Contractor required to increase MTBF performance at predetermined points over 5 year warranty

---- For failure to meet performance, manufacturer repairs or replaces defective units

-- F-15

--- Correction of deficiencies

---- Contractor pays all costs associated with correction of design deficiencies discovered within 6 months after acceptance up to $5 Million

--- Warranty of supplies

---- Contractor repairs/replaces any defects in materials and workmanship discovered within 12 months after acceptance

-- F-15 support equipment

--- Warranty of supplies

---- Contractor repairs/replaces any defects in material and workmanship discovered within 1 year after acceptance

-- F-16 aircraft

--- Correction of deficiencies

---- Contractor corrects design deficiencies discovered within 6 months after acceptance

-- TF-33 engine (AWACS)

--- Warranty of supplies

---- Contractor repairs/replaces any defect in materials and workmanship discovered within 30 months after delivery, 5 months after first operational use or 300 hours of use

-- C-5B

--- Warranty of supplies

---- Contractor repairs/replaces any defect in material and workmanship discovered within 2 years after delivery

--- Maintainability incentive

---- Penalty of up to $25M if 1st 16 aircraft exceed 40 base level maintenance man hours/flight hour during specified test period

--- Performance incentive

---- Verified performance must meet predicted performance in takeoff, landings, payload/range

---- Contractor penalty of up to $7M in spares

-- F-16 brakes

--- Service life guarantee

---- Contractor warrants brake assemblies will be serviceable for a minimum of 500 sorties over a five year test period

---- Additional spares as penalty; financial incentive as reward

-- Alternate fighter engine

--- Part I, Introduction to Service

---- Contractor warrants engines, modules, components, parts and support equipment for 3 years or 1000 engine flight hours

---- Intermediate thrust and fuel consumption warranted for 3000 TAC cycles or 8 years

--- Part II, High Cost/Maintenance Drivers

---- Combuster/high pressure turbine warranted 3000 TAC cycles or 8 years

--- Part III, Long-Term Stability

---- Fleet-wide scheduled and unscheduled engine replacement must be at or below designated total engine removal rate

-- T-46 Next Generation Trainer

--- Part I, Correction of Deficiencies

---- Contractor repairs/replaces any defects in design, material, workmanship or integration discovered within 1 year of acceptance

--- Part II, Reliability, Maintainability and Availability Warranty

---- Contractor responsible to correct any condition which causes system to not meet specified values under 16 RM&A areas

---- Contractor retrofits all accepted aircraft with corrections

--- Part III, Durability Test Article Deficiencies

---- Contractor responsible to correct any durability deficiencies discovered during first 40,000 hours of durability testing

---- Contractor retrofits all aircraft accepted prior to completion of the 40,000 hours of testing

--- PART IV, Commercial Warranties

---- Contractor required to obtain best possible commercial warranties from vendors, and pass these through to the government

--- Part V, Service Life Policy

---- Contractor repairs/replaces certain components that fail within 10,000 flying hours or 10 years after acceptance of the aircraft

-- F-109 engine (T-46)

--- Correction of deficiencies - basic serviceability clause

---- Contractor corrects any defects in material or workmanship discovered within 1 year after acceptance

--- Production engine serviceability

---- Contractor warrants the engine will operate in accordance with the technical orders and maintenance manuals for 1000 flight hours or 2 years after acceptance

---- Contractor repairs/replaces any failed part

-- C-17

--- Conformance to specifications

---- Contractor warrants design, integration, material, workmanship, design information and vendor equipment installation

---- Contractor repairs/replaces nonconforming structure, system, component, support equipment or spare part

--- Structure warranty

---- Contractor repairs/replaces any defects/failures in structure discovered during 45,00 hours of fatigue testing

--- Structural service life

---- Contractor warrants service life of each aircraft delivered under first two production options for 10,000 flying hours or 10 years and 20,000 landings or 10 years for landing gear

--- Engine warranty

---- Engine and engine modules warranted for parts and labor for 3000 engine operating hours

---- Shop visit rate and fuel consumption warranties included

--- Reliability, Maintainability and Availability (RM&A)

---- 9 MR&A parameters warranted such as system mission completion success probability, air vehicle MTBF, maintenance man-hours/flying hour, maintenance downtime per sortie, etc.

---- Contractor repairs/replaces/redesigns as necessary to meet warranty value

---- Effective until 180 days after IOC achieved (12th aircraft)

Chairman TOWER. Thank you, General.

Thank you, gentlemen.

Let me ask all of you to comment on this.

Do you believe in general it is more desirable for the Government to be a self-insurer with respect to weapon performance guarantees?

Dr. DELAUER. In certain instances, Mr. Chairman, I do.

One of the things I was concerned about in the past has been, for instance, aircraft brakes. At one time the contractor insisted that he be responsible for all elements of the brakes.

I think the Air Force could have saved a tremendous amount of money if they had gone competitive on the parts that wore out. They didn't because they didn't want to violate the warranty.

I have never in my experience ever found whether or not the Air Force charged some contractor for the fact he had an accident because the brakes went out. I think in certain cases a self-warranty decision should be made for the purpose of expanding competition or for the purpose of cost effectiveness.

I think in other cases self-warranties should not be had. I don't think you need to have self-warranties in satellites. I think you can provide enough incentive to the contractor if you make a positive incentive. He will not only insure it, but he will assure that he gets it in orbit.

The first one we ever did, which is the one we did at TRW on the VALOR contract, we made a reasonable amount of money. I wish we had had a better performance incentive because it is still working after 15 years.

So, I believe that in certain instances there ought to be self-warranties, Mr. Chairman.

Admiral WHITE. I think there are certain cases where self-warranty makes sense. For example, the Navy makes many of our propellers and there are other cases where it is wise.

Chairman TOWER. General Babers?

General BABERS. I would go with what has been stated, sir.

The large caliber munitions for sure, the explosive compounds, many of the mechanical components that we have whose testing is fairly straightforward, components where we have a fine opportunity to gauge the maturity as time goes on.

I think we could spend the money increasing their durability as opposed in many cases to buying the insurance policy.

General STANSBERRY. I think as a general policy self-insurance makes sense. Even where we do have warranties or guarantees, there is an end to them, sometimes the liability is capped.

On the alternate fighter engine warranties, for example, which we are all very proud of, the engine manufacturer does not have to pay the bill if someday, unfortunately, a fighter crashes into a big building and kills a lot of people because the engine doesn't work.

Every deal is different.

Chairman TOWER. As you gentlemen know, quite a number of Members of Congress are concerned to get weapons into production without a determination to meet all the operational requirements. That, of course, tempts us to get into the management of the Defense Department in the acquisition process.

Why does this happen? Is there a better way to solve the problem than performance guarantees?

Dr. DeLauer. Let me start it off, Mr. Chairman.

I think you put your finger right on the problem that does exist within our acquisition process and that is the transition into manufacturing. We have been concerned about this.

We have just issued a new Department regulation that came out of an effort of the Defense Science Board, the one run by Mr. Willoughby out of the Navy, which addresses this issue of transition of manufacturing from the development side.

If we do this thing properly, I think that many of the deficiencies that we see we get the first time production articles, which are different from what we have tested, the engineering models or the nonproduction tooling models, we will see that a lot of these deficiencies will indeed be corrected.

One of the other areas that will show a great improvement is the policy of being sure that we derate our system.

I didn't mention this in my testimony, but remember that in a lot of these commercial products you are not getting any performance guarantees.

In other words, notwithstanding what they might advertise on TV, I don't think anybody ever knows how much horsepower they get out of their engines or automobiles.

You can get a theoretical horsepower, but the way things are put together they do not run at the very high end of the power unless you look at the Daytona 500. But you derate the system and, therefore, they last much longer and that is one of the reasons they can warranty.

The same way on gas mileage. I think that a more orderly way to transition to maufacturing from the production tooling will lead us to a much better product sooner if we pay attention to the effort.

Chairman Tower. Admiral White?

Admiral White. As Dr. DeLauer stated, Mr. Willoughby, who works for me, led this effort. It is very critical and that is what I meant in my statement, that we must continue to emphasize the aspect of quality on the shop floor.

The way this thing works is our assumption, to start with, that stress causes failures. So, we design in at the front end. We try to define what the stresses are.

We then design those stresses out of the system by derating the design and other methods and proof test it. It has been a very highly successful effort for the Navy.

As Dr. DeLauer said, it is now in writing for the entire Defense Department. It is a very good way to get better weapon systems, one which we use and we will continue to emphasize even with the warranty.

General Babers. I think we have the mechanism in place to make sure that the system meets our requirements at the time we place it in the field. We have those parameters spelled out in the specifications that are written in the contract and coordinate the test plan against the development and operational test.

My focus is what happens after it has been in the field for the second and third year.

Chairman TOWER. General Stansberry?

General STANSBERRY. Sir, I think while we have problems, that all of our effort should be set in a certain context. I know we have problems. We have problems with some of our systems.

But, America's arms are the best in the world. The F-15, and F-16's are the best fighters in the world. Our electronics over the last few years——

Chairman TOWER. I just came back from overseas. Everybody seems to prefer our system rather than anybody else's.

Admiral WHITE. Yes, sir, including the Soviets.

Senator LEVIN. Particularly the Soviets.

General STANSBERRY. Those that have the choice buy American because we have the best systems.

We have cost problems, but overall on billions of dollars of work on contracts our estimate at ESD completion is within 1 percent of target price.

Having said that, there are still a lot of actions we should take.

One of the actions needed is better motivation for contractors to invest in modern tools and equipment in their factories.

Right now if a contractor, on an annual procurement basis, invests in new capital goods designed to improve reliability or quality or to lower cost he is going to lower his profit potential the next time he negotiates a contract.

The motivation is exactly backward from what it should be.

Under the DOD industrial modernization improvement program we have now cut deals with the Westinghouse Corp. and several others wherein we agree that if the contractor will make an investment to improve reliability and quality and lower price, we will split the savings with him and everybody comes out the winner.

I predict that this area could save, if adopted across the board, billions of dollars.

Chairman TOWER. Would you see any problem, Dr. DeLauer, and I will ask the others to comment as well, in the general policy requiring materials and workmanship warranty?

Dr. DELAUER. No, sir. We have them on 95 percent of our product, on material and workmanship. No problem at all. It is in the DAR.

Chairman TOWER. Admiral White?

Admiral WHITE. I see no problem.

General BABERS. Sir, I think it works very well.

General STANSBERRY. No problem at all. I wouldn't approve a contract that did not have some coverage.

Chairman TOWER. So, we do need to make a distinction between material and workmanship guarantees?

Dr. DELAUER. Absolutely. They are all different.

Chairman TOWER. I think the difference has been obscured.

Dr. DELAUER. They have used them interchangeably. That is why I was hoping that Senator Levin, who is a lawyer, would be more explicit. I understand he is very explicit with me.

What do the words really mean? I think part of the problem in section 794 is the fact that the law now has to be interpreted by lawyers and not by engineers.

It explicitly says performance guarantees. That means something. You just can't say that is a warranty.

Chairman TOWER. Gentlemen, thank you.

I have additional questions which I will submit for the record. If we can get your response in writing.

Senator Nunn?

Senator NUNN. Dr. DeLauer, you mentioned, I believe in the first part of your testimony, that one-third of all the items now are under warranty.

Is that right?

Dr. DELAUER. Those were the numbers, something like that.

Under certain warranty provisions which have to do with the correction of deficiency clause in it.

Senator NUNN. If that is the case, that means two-thirds of the items are not under warranty of any type; is that right?

Dr. DELAUER. No, not necessarily. The fact that fixed-price contracts by definition in the regulations have to include that clause doesn't mean that the other ones do not.

The historian, Harvey Gordon, who really was given a kind of a hard time earlier, says that one-third have additional warranties. This is the 4.1 million types of items covered by additional warranties other than just the normal ones you would cover.

Senator NUNN. If you were trying to look at this in macro terms, what percentage of overall weapon systems would have some type of warranty?

Dr. DELAUER. I would say every single one of our weapons systems had some kind of warranty.

Senator NUNN. What we are talking about is greatly increasing the number of warranties.

Dr. DELAUER. What the law is talking about is that we have performance guarantees.

Senator WARNER. Are you addressing your questions to material and workmanship or performance?

Senator NUNN. I am making it as broad as possible so that we can get a macro view of it. I would like to get a breakdown of it.

Do you have some performance warranties?

Dr. DELAUER. We don't call call them warranties. They are guarantees.

Senator NUNN. Tell me the difference.

Dr. DELAUER. A warranty generally applies to workmanship on defects in material, and the requirement for replacement is spelled out.

A performance guarantee is a guarantee that a particular product will perform to a particular measurable parameter, and we can measure that parameter.

Senator NUNN. A guarantee is in some ways stronger than a warranty: is that correct?

Dr. DELAUER. It generally has a greater monetary impact.

Let me give you the facts on this engine thing.

A warranty, as we use it in the engine, applies to unserviceability and defects in material and workmanship for the first thousand flight hours or 3 years. In other words, if something breaks, we look at it. If it was manufactured incorrectly, somebody passed inspection when they shouldn't have, then the warranty applies.

Now, concerning the guarantee, if the contract says that the hot section will last 3,000 tactical cycles, which are things we can

measure and count, the guarantee applies; and if it doesn't, there are some monetary penalties that go along with it.

There is also a guarantee on performance which involves retention of the thrust.

One of the real problems was that the old engines had to be taken out of the airplane, trimmed up again and put back in. It turns out that the criteria for evaluation, criteria for performance in the case of thrust retention is how many times do you take it out of the airplane. It is the removal rate.

If he keeps that removal rate down, he gets paid for keeping that thing down.

Those are two different kinds of quality provisions which cover the thing, warranties and guarantees.

Senator NUNN. How many waivers do you anticipate in an annual period if the law stays as it is now? How many waivers do you think you would be filing from the Department?

Dr. DELAUER. We don't know.

Senator NUNN. Are you talking about hundreds or thousands or ten thousands or millions?

Dr. DELAUER. As I pointed out to you, in 1983 we had 14.8 million procurement items. Even if you only take 1 percent, that is 148,000 waivers.

Senator NUNN. Are you talking about sending waivers over here that could number in the hundreds of thousands?

Dr. DELAUER. It could be. I don't think I can aggregate them.

Senator NUNN. How about just the Air Force, General?

General STANSBERRY. I believe if the law stays exactly as written and we were to interpret it strictly, it would require several hundred waivers to go to the Secretary of Defense for full or partial waivers.

Senator NUNN. Several hundred out of all the items you handle is not very much.

General STANSBERRY. No, sir, but I am guessing and speculating. That is the low end, in my view.

Senator NUNN. How about the Navy, Admiral?

Admiral WHITE. If our interpretation of the law is correct, then we wouldn't anticipate waivers. If our interpretation is incorrect, then it would be a horrendous nightmare.

Senator NUNN. Whom do you mean by "our"?

Admiral WHITE. The Navy general counsel.

Senator NUNN. You are saying that they are interpreting it——

Admiral WHITE. For example, spare parts, within the Navy I have about 3½ million contract actions a year. Most of these are very small items. The preponderance of them is under $10,000.

We don't think that these provisions apply to spare parts. If you were to say to me they do, then I tell you we would have to look at 3½ million contract actions and it will be a jungle. We don't think that applies, though.

Senator NUNN. Do you get warranties on spare parts?

Admiral WHITE. In some cases. It depends on the circumstances.

We look at the end use of the item, the cost of the warranty, the degree of development, complexity, a large number of things, and then make a conscious decision whether we ought to use the warranty in that case.

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We will continue to do that under our interpretation.

Senator NUNN. Dr. DeLauer, will you have a uniform interpretation of this throughout the services; will the general counsel of the Department of Defense provide uniform interpretation to each service?

Dr. DELAUER. We have to do that because the only one that can provide a waiver to these things is the Secretary of Defense, not the service Secretaries.

Senator NUNN. Do you think spare parts are covered or not covered?

Dr. DELAUER. I think it depends on the particular procurement.

Since our DAR says that any fixed-price procurement ought to be covered for material and workmanship, if you buy spare parts on a fixed-price contract, you would probably impose that particular warranty.

There is no performance guarantee on spare parts.

Senator NUNN. That means all of them would have to have a waiver, would it not, if there is no performance guarantee on spare parts?

Dr. DELAUER. Except if they say that is not a weapon system.

The argument right now is on weapon systems/components. Therein lies the inflexibility of the particular section 794.

Senator NUNN. You say spare parts are not covered because they are not a component?

Dr. DELAUER. They could.

Senator NUNN. Why aren't they a component?

Admiral WHITE. You have a system which is a ship. You would have a propulsion system which would be a subsystem. You would have a main turbine which would be a component.

If you start talking about an "O" ring or gasket——

Senator NUNN. You just lost the lawyers and are back to the engineers.

Senator WARNER. Can he finish the answer for the record?

Admiral WHITE. The ship is a system. You have a subsystem which might be a propulsion plant. Then you have a component of that which might be a turbine. You have a spare part which is not covered under the law which could be an "O" ring or gasket.

When I said it would be a nightmare, if you were to say I have to establish performance requirements on gaskets, it would be an impossible situation.

We don't think it applies, so we are not overly concerned.

Senator NUNN. When do you anticipate having the final rules and regulations?

Dr. DELAUER. We sent the thing out for comment. We are suppose to implement it as of March 14 if you don't give us some help.

Senator NUNN. Do you have suggested changes in writing now?

Dr. DELAUER. What we are doing now is to change the DAR's if necessary, based on——

Senator NUNN. I mean suggested changes in the law.

Do you have suggested changes in the law in mind?

Dr. DELAUER. I have some suggested changes, yes, but, as I said in my testimony, I would like to sit down with the staff and lawyers and let them get together and be sure we don't paint ourselves

into one of these crazy administrative corners in order to arrive at a very noble goal.

Senator NUNN. The small business aspect gives me some concern, having been through all the Small Business Committee's deliberations on how small business can participate.

In the Small Business Committee we are trying to get the Department of Defense and each service to break out contracts and put them in small denominations because small business can't bid on F-15 procurements. They have to bid on small parts.

Under the existing law on warranties, forgetting the new law for the moment, what are small businesses required to do in bidding competitively when there are, let us say, warranty requirements?

Are they required to give the same kind of warranty as everybody else in exactly the same manner?

Dr. DELAUER. Yes. If the procurement is cut on a particular basis and small business says we want to bid, that specification is the same for them.

Senator NUNN. How about small business setasides?

Dr. DELAUER. On the small business setaside the warranty provision will be there. It is set aside and they bid it.

In that case you don't bid it against the big guy.

Senator NUNN. You still have the warranty?

Dr. DELAUER. Sure.

Senator NUNN. What do you do about bonds for performance on small business?

Let us say you greatly enlarge the requirement for performance warranties under the new law, what happens in terms of the financial stability that you require business to demonstrate in order to be determined a reliable backer of that warranty?

Dr. DELAUER. As I remember, in the procurement process we look at the economic viability of any supplier.

Senator NUNN. Do you include in that the contingent liability on all warranties?

Dr. DELAUER. We have not in the past because in most cases we have not been that punitive.

Senator NUNN. If you go to full performance warranties, it seems to me you will have a different ball game for small business.

Dr. DELAUER. Senator Nunn, you are preaching to the choir, I agree with you.

Senator NUNN. I can't imagine a small businessman being able to get a bond to back up a performance warranty if it is greatly enlarged.

Dr. DELAUER. What makes it tough, if it is a component or subsystem of a major system, the liability may indeed fall on him.

That is one reason in most cases contingent liabilities are handled by the Government.

Senator NUNN. I think this is something we had better watch.

I completely agree with the goal of more warranties and better performance and I supported the testing provision which the DOD opposed. I can see a very, very serious problem coming up here as to whether we are going to broaden or very seriously narrow competition, whether we are going to have very few people that can participate in the bidding process if the contingent liabilities are very large.

Dr. DeLAUER. Up to now we have responses from a lot of people on this.

In the small business area it is not completely one way. We have as many people who think this isn't too bad as others who don't. It is a mixed bag.

I think part of it is the uncertainty. You have to talk specifics before you can get somebody to give you a response.

Senator NUNN. Don't you think it would be helpful to back up and examine a major system—you gave an example of the engines, but let us take some which don't have warranties in the last year.

It seems to me the way to understand this and have the small business community be able to determine the impact of this law, you ought to take 8 or 10 weapon systems and back them up and see what would have happened if the law had been in existence and how would it have been interpreted.

I don't see how you can tell with it otherwise.

Dr. DeLAUER. We don't either. We have to do it because by nature of complying with the law, we are going to go back to all systems and it won't be long before you will have historical evidence.

Senator NUNN. Do you think we will have that in the next 30 or 40 days? Are you working on it now?

Dr. DeLAUER. No, because once we put the thing out on March 14, it is not even an exercise. It is indeed "go to it and do the job" because the law says you go do it. You start collecting the data.

I don't know how the Materiel Commands are intending to attack this.

Senator NUNN. Is anybody focusing on this from a small business point of view or is it just individual contractors?

Dr. DeLAUER. Mary Ann Gilleece tells me that as a consequence of publishing our proposed guidance in the Federal Register, which gives everybody an opportunity for comment, we have gotten quite a bit back from small business.

My people tell me that it is not 50–50. It is overwhelmingly opposed, but there are still some people who don't oppose it.

I don't want to overstate the case. I wish we could have a study. I wish this whole thing would have been that way, do as you have insisted we do in many other cases.

Look, here is a problem, the two areas we didn't do it, one was this and the other was on the test. What we did was push the requirement on and off we go.

Yet on airlift and even on the dual role fighter, all these other things, you asked us to come back with a report and show you the impact and we sat down and showed you the impact and you make some legislative initiatives that handled each one of these areas.

In these two cases this was not done. It was done outside of the authorization committees of both Houses and we had zero hearings on it.

Nobody looked at the impact on it. Now it is the law of the land and we have to implement it.

Senator NUNN. My time has expired.

Thank you.

Chairman TOWER. Dr. DeLauer, anything you can have for us in a timely fashion we appreciate because we are going to report a bill out of here in a couple of months.

We will consider the possibility of some amendment or revisions in the existing law during the course of our markup.

Any additional remarks you have or supporting evidence.

Dr. DELAUER. I believe I have outlined all the points in my testimony.

Chairman TOWER. Senator Warner?

Senator WARNER. I will address my questions to Dr. DeLauer.

Dr. DeLauer, we have tried very hard to inject an element of greater competition to alleviate some of the frightful stories we have had on spare parts.

It seems to me this might force the prime contractor to try to provide more of the spare parts and maintenance to protect his liability.

Do you think this is counterforce against the progress we will make now in competition?

Dr. DELAUER. I think there may indeed be a tendency to use this as a deterrent to the breakout, but I think we can separate those. I think the question of quality, no matter how we procure it, is a question of being smart in the way we apply it.

On the question of parts breakout, proprietary data, data packages, those are separate procurement things. Initiatives are underway to make improvements in that.

I think indeed while there may be some coupling, it is not inevitable. I think it is manageable.

Senator WARNER. It is probably too early to clearly answer this question, but do you feel this is an invitation to have some really excess profits built into some of these contracts, particularly in the front end early on before these systems are in operation?

Dr. DELAUER. There is always that danger, Senator Warner.

If we do it correctly and carefully, I don't see where it can be. You know, we operate on a cost principle which everybody fails to realize in most cases. Notwithstanding what you negotiate, if the costs really come in under for a short period of time, this may have some advantages, but then we get back to them again when we renegotiate the next buy.

Senator QUAYLE. Recognizing that the military departments have to take into consideration the aggregate cost of weapons systems in view of their overall procurement program, do you think they might be forced to lessen warranty requirements in the hopes of decreasing the cost of a performance guarantee?

Dr. DELAUER. It could be. That could be one thing. I will let these fellows who do the buying give you their opinion.

Admiral WHITE. I think there might be a tendency to do that. Obviously, it will take more money to accomplish than we have budgeted.

Senator WARNER. Do you agree with the observation?

General STANSBERRY. Yes, because whenever we are budget constrained and we still want something, we will take a look at the requirement and see what can we really do without.

Senator WARNER. Either eliminate a system or downgrade it in your requirement.

General STANSBERRY. Not eliminate it. Probably downgrade the requirement.

Admiral WHITE. Or not buy something.

Senator WARNER. Well, that is elimination.

General BABERS. Sir, I am not sure that I am in step with my colleagues. I would talk to the warranty business at this point.

We don't want something out there unless we are confident it is going to perform.

Senator WARNER. I am more concerned about the performance and guarantee.

General BABERS. Again, I think the current mechanism of putting things through the very stringent development and operational test and oversights of all types, I just don't see that as a big cost driver.

Senator WARNER. If we are doing all that, there is no need for the guarantee. The guarantee is put in there because the system is not working.

General BABERS. Sir, when you talk about the big systems, we do come through that with the guarantee of the type that Dr. DeLauer spoke about.

When we get into talking about components, reprocurements down the stream 3, 4, and 5 years, again they must demonstrate acceptability against the specifications.

At the time, we accept them or we don't accept them. I think we do a better job on guarantees today than is recognized.

If I have a problem that I think we can take better advantage of that deals with warranties, then we are addressing the durability of the item after it gets in the field.

Senator WARNER. Let us say the Army has six major systems. Take, for example, the new helicopter, an extraordinary machine. You have driven the requirement to the maximum, in my judgment.

If you were on the threshold of going into that helicopter system again today and looked at five other systems, you might not put as many requirements on that new helicopter in hopes of bringing in that contract for a little less and the money to be spread elsewhere in the overall procurement.

General BABERS. In that regard in scaling back the requirements to make it a less sophisticated item so that technology won't drive you to higher prices, yes, sir, I can understand that.

I did not attribute that to the guarantee necessarily. I do think that is more driven by the user requirement and his thirst to take advantage of technology than it is from guarantees.

Senator WARNER. Guarantees are not going to come free. If somebody gets burned down the line, word will be passed down the ranks.

Dr. DELAUER. We have some in the Defense Department.

I can guarantee you that guarantee rates on commercial satellites have gone up. There is not a better way for anybody to figure out what the consequence of failure is than cost.

As far as the contractor was concerned, he had a guarantee. He bought it as an insurance policy. That is the way he handled guarantees.

The rates are going up because of the failures. They don't come free.

Senator WARNER. It is my observation many of the defense contractors don't have a nice guide for many years. They go through real gyrations. If they are driven up on these things, they might opt for bankruptcy and walk away from it.

Dr. DELAUER. We have had two instances in the last 3 months where we have had to take a program out because of bankruptcy in a small business and put it back in.

I think it was one Army program. There were two programs. The guy got overextended and he went out of business. We had to take the business back and put it someplace else.

So, it happens on a reasonably regular basis.

General STANSBERRY. I think the small business question with the performance guarantees would be more like that. I don't think they would quit bidding, knowing they had to guarantee a performance. I think they would be success oriented and hope for the best.

Then when you go back and say it didn't work, ask them for a big check, they would say no money.

Senator WARNER. Thank you, Mr. Chairman.

Chairman TOWER. Senator Exon?

Senator EXON. Thank you, Mr. Chairman.

Gentlemen, I have been listening with keen interest. I have been supporting this concept, but the more I hear of the objections that you have, it seems to me that you, too, endorse the concept, but are saying that this particular legislation has been forced down your throat in such a fashion that you can't begin to realistically comply.

Is that a fair assessment?

Dr. DELAUER. I want to be precise.

We are going to comply, but I would like to focus on your words, realistically and cost effectively comply. We are going to have to comply. That is the way it is.

It is going to cost us money. It will take us time. We will have to take advantage of the waiver process whenever we can until we get more experience on just how to implement essentially performance guarantee requirement.

Senator EXON. Do you all share this view?

Dr. DELAUER. Except we have a little problem with the Navy because they have defined the problem differently. We need to have a "come to Jesus" meeting on that one. [Laughter.]

General STANSBERRY. I certainly share Dr. DeLauer's view. I do believe that speaking for the Air Force, we are not at the point of rosy perfection on the use of guarantees or warranties yet, but we are making progress.

I think these hearings, the way they are focusing on what we are doing now, are going to provide great interest and overall are healthy.

If you could define away the problem, I would be happy, but I don't think overall we will.

I do believe that it will be extremely difficult to work with the current language as written.

Senator EXON. Admiral, I would like to hear from the Navy.

Admiral WHITE. The Navy in fact has had a long history of warranty provisions including performance provisions.

It might interest you to know that when we bought the *Monitor* back during the Civil War, it came with a performance guarantee. It had to steam for 12 hours at 8 knots. It had a defects and inspections clause.

Unfortunately, the ship was lost in battle so we will never know whether the shipbuilder would have stood behind his warranty. [Laughter.]

Dr. DELAUER. I rest my case.

Admiral WHITE. So, we will never know how effective we would have been in ensuring that the warranty clause was complied with.

The first airplane we bought from the Wright brothers came with performance guarantees. It had to fly and it had certain defect and inspection clauses in it.

We are not as concerned as our sister services in terms of our ability to meet the law. We do make it clear that it is going to cost money and it is going to cost people. Nothing comes free. There is no free lunch.

As I said, we are doing it now on $20 billion of the $30 billion of procurement funds. To do it on the other $10 billion will cost money that we don't have budgeted and it will cost people.

We can do it in terms of implementing it without much difficulty.

General BABERS. We are going to have a tough go in executing the 1984 program as now planned and approved.

Beginning March 14, with the very rigid interpretation that we must make of the law, we have solicitations on the street that we will have to go back and delay until after we give industry a chance to assess the cost.

We have price options made under competitive conditions that we will have to forego or open up again and negotiate what that option price will be, with whatever administrative time loss is involved.

There is a tremendous administrative burden associated with the procurement process. I wish we could simplify it. The year 1984 is going to be a severe challenge. On any contract we award on the day the law takes effect we will be in compliance.

Senator EXON. I am trying to think back on this and it seems to me, Mr. Chairman, that this is one of the those classic cases when we encountered legislation on an appropriations bill and the rather complicated matter it was based on did not come before this authorizing committee as it properly should have.

Is my memory serving me correctly?

Chairman TOWER. Your memory serves you very well.

I think we have been inclined too much to legislate on appropriations bills. I am confident that given the pressure of work and the multifarious jurisdictions the Appropriations Committee has, they cannot devote professional staff time or members' time to these issues as we do here.

Senator EXON. Nor the expertise.

Chairman TOWER. I didn't say that.

Senator EXON. Did I say that? [Laughter.]

Dr. DELAUER. Mr. Chairman, let me make a comment.

Senator Andrews pointed out that we appear to be vacillating within the Department of Defense. He gave a litany of his conversations with the Secretary back and forth.

There never has been vacillation in regard to our goal of having higher quality. The Secretary is strong on going after warranties.

The problem has been this legislation in particular, not only the restrictiveness of its application, but also where it was on an appropriation bill. We objected to that.

That was the basis for asking for repeal. Now, we bracketed it in the 1985 budget submission, but we also bracketed it in the supplemental to the 1984.

So, there is an opportunity when reviewing the supplemental for the 1984 appropriations that this could be indeed modified in some way at that time.

Senator EXON. Mr. Secretary, did the Department of Defense openly, vociferously oppose this when it passed in an appropriations bill?

Dr. DELAUER. Yes, sir; we testified. We said, "Look, this is too restrictive."

Senator EXON. You testified in front of the Appropriations Committees?

Dr. DELAUER. Yes; they listened to us politely and proceeded to put it in the bill.

Senator EXON. Thank you. It looks like a problem.

I have no further questions, Mr. Chairman.

Chairman TOWER. Senator Quayle?

Senator QUAYLE. Thank you, Mr. Chairman.

Dr. DeLauer, as I read section 794 the word "warranty" never appears.

Dr. DELAUER. That is right.

Senator QUAYLE. The word "warranty" is not contained in this provision?

Dr. DELAUER. That is right.

Senator QUAYLE. It seems we are not talking about classic commercial warranties, but about performance guarantees.

Is it true that DOD currently acquires warranties for materials and workmanship across the board?

Dr. DELAUER. Yes.

Senator QUAYLE. Across all weapons systems?

Dr. DELAUER. Basically across the board.

Senator QUAYLE. Maybe what we need first of all is a legal distinction between commercial warranties and guarantees?

Dr. DELAUER. Senator Quayle, I went back to this crowd right behind me. I said, "Tell me the difference, how we use it in the Department."

We do not use it in what I would call the pure sense at all.

One of the first things I am going to do on the DAR when we look at this thing is at least put some definition down of what we mean by each one of these so that everybody in the place, at least when they read our regulations—they may not agree with the definitions—can see how we define it. We have to do that.

These terms are used interchangeably and loosely.

Senator QUAYLE. It seems to me that if we are asking for a performance guarantee, and the rationale for applying it is that they

do it in the commercial sector, we are mixing apples and oranges. It seems we are asking for far more than a standard commercial-type warranty.

Dr. DELAUER. That is right.

Senator QUAYLE. We are asking a contractor for a guarantee on performance, rather than a broad private sector-type warranty.

Dr. DELAUER. If I can get that message across this morning, the time is well spent.

That is the distinction we have to resolve in some way. We can have all of it if they want.

If that thing was rewritten in a way that says: Look, we want quality and we want the quality to be reflected in the contract and that quality can be precisely tailored to the particular procurement you are talking about. If we should include warranties, we will have a definition of warranties as primarily material and workmanship guarantees. Guarantees can be mean time between failures, it can be tach cycles in engines, it can be hours in orbit for satellites. These are essentially performance guarantees.

We can do this if we are given the assistance on making the language such that we can administer it.

What you are after is quality, if I believe everybody's argument.

Senator QUAYLE. Can we take that a couple of steps further?

First, you would prefer a broader definition of warranty such as that currently in the DAR?

Dr. DELAUER. There would be no change.

Senator QUAYLE. Second, you would prefer a narrower defintion of what the words "guarantee" and "performance guarantee" actually mean.

How are we to go about defining in legislation what should constitute a performance guarantee for an engine versus a performance guarantee for a satellite or for a tank?

Dr. DELAUER. If you would direct us as a request of these hearings that there is certain confusion on this that you would like to have cleared up, and for us to come back to you with our proposal on how we would address this for you to review, I would salute and get out of here and go do it.

Senator QUAYLE. I am not the chairman, but I am looking at our staff chairman——

Dr. DELAUER. Please don't inflate the staff any more. [Laughter.]

Senator QUAYLE. Unless you hear otherwise, please consider that a request made by the committee.

Dr. DELAUER. We will get it in writing so that you can go to work. We are working on alternate language and we will forward the language to you as quickly as possible.

Senator QUAYLE. We need to have your views and consider the practical ramifications of section 794.

When are your waivers expected to start coming to the committee?

Dr. DELAUER. The 14th of March. You are not going to put me in jail. I am too old for that.

Senator QUAYLE. I would like to ask Admiral White one question, without going to the *Monitor* and the Civil War.

Dr. DELAUER. You did not ask how much that *Monitor* performance and guarantee cost.

Senator QUAYLE. Since the Navy has a substantial history of applying warranties to shipbuilding contracts, can you tell us where the cost of a warranty becomes most prevalent. Is it in personnel to administer the warranty, or in procurement costs associated directly with manufacturing the weapon?

Admiral WHITE. It will be in both the personnel and the procurement cost.

Senator QUAYLE. I am trying to compare cost effectiveness and how warranties can be used in the most useful way.

I would like to combine those two if we can. We are talking about usefulness and we are talking about cost effectiveness.

How do performance guarantees stack up here?

Admiral WHITE. It depends, of course, on the article. We have a large experience in ships, so I can tell you this.

On the CVN the cost of the warranty and performance provision is less than 1 percent; for an attack submarine, it is about 1½ percent; a frigate, perhaps a little bit more than that.

We have a large data base to go back too many years. It is difficult for me to tell you what the cost is going to be precisely for areas where we will now be required to get warranties—where we don't have this data base.

I would assume it will be somewhere between 1 and 5 or 6 percent on those contracts.

If you are talking about $10 billion worth, you have an idea of the associated cost. That is up front cost.

Now, the question I can't answer is over the life of those will I save because I have a more reliable product.

We think certainly in the areas where we are using it, that is true—we are saving—or we wouldn't be using it in ships.

In performance we have a long list of requirements for guaranteed performance for ships that are quite effective.

Dr. DELAUER. On the engine, the engine is the best one. Not only is it current, but they, the Air Force, took a tremendous amount of time and effort to analyze exactly how they structured technically the fleet-wide engine removal guarantee.

They were able to show that if they could cut the engine removals down by a certain number, that in turn had fewer people involved, it kept the airplane on the flight line longer, and they were able to quantify it.

When they put the request for proposal out, they knew exactly what they would say.

The question was how much will it cost. They got a proposal back from the contractor saying, "For this particular part, here is what we are going to charge you."

They traded off what they thought they could save against what is charged. They had a quantitative number based on so many engines in the fleet. They can tell you.

They have a historical data base at a particular place. All the engines are bought out of one office in Wright Field.

Those guys have spent their lives in the business. They know what they are doing. That is the same way with the airlines.

You sit there and talk carefully about the airlines and how they would do it with the manufacturers. The airlines have a tremendous amount of impact on exactly what the nature of that warran-

ty means to them in cost and how much they are willing to pay for it.

Senator QUAYLE [presiding]. My time is up.

I just want to reiterate concerns that have already been expressed and recommend that you please take into consideration the small business aspect on spare parts and other things.

Small business is a key component in this.

Senator Levin?

Senator LEVIN. Thank you, Mr. Chairman.

Senator QUAYLE. That has a nice ring to it. Say it again. [Laughter.]

Senator LEVIN. I would say it looks pretty good, too, but John may be back. [Laughter.]

Is the position of the Department of Defense that we should repeal the existing provision now while we are looking for the more subtle or more carefully drawn provision?

Dr. DELAUER. We have so proposed it in both the 1985 submission as well as the 1984 supplemental, yes, sir.

Senator LEVIN. I don't think it has been clear, but that is your position, you are willing to work on this study, draft it, in the meantime you want the law to be repealed?

Dr. DELAUER. That is what we have submitted.

Senator LEVIN. How many contract actions are there roughly a year? Rounded off, is it about 15 million?

Dr. DELAUER. Yes.

Senator LEVIN. What percentage of those would be covered by the law as it now reads which covers systems, subsystems and components?

Presumably anything less than components when you get down to spares, I have to agree with the Navy's interpretation, it would not be covered—you are not paying for that advice, but I will give it to you anyway—assuming you are right, what percentage of the 15 million is covered?

Dr. DELAUER. We don't know.

Senator LEVIN. Take a guess.

Dr. DELAUER. I will bound it. It is probably not more than 1 percent and probably not less than a one-tenth of 1 percent. That is on those procurement actions, that is 100,000 versus a percentage, a one-tenth of that.

Senator LEVIN. You are talking somewhere in the area of 100,000 actions a year?

Dr. DELAUER. Yes.

Senator LEVIN. But we don't know in what?

Dr. DELAUER. That is a guess, advice of counsel.

Senator LEVIN. So far, can you give us an estimate as to what percentage of those contracts you need a waiver on?

Dr. DELAUER. No, I have no idea.

Senator LEVIN. You don't know whether you will need waivers in half of the cases covered or one-tenth of the cases covered?

Dr. DELAUER. No. Because as pointed out by the Navy, on some of the procurement actions there is no performance to judge. Therefore, you can comply by just having a warranty on material and workmanship.

It has to be a level where there is a way to judge performance. That is what the law says. It says written performance guarantees.

Senator LEVIN. By the way, in terms of the words "guarantee" and "warranty" I am not sure there is a difference.

The word "warranty" means guarantee. It is another word for it. Some people make the distinction between contract and agreement. An agreement is a contract. A contract is an agreement.

I am going to try to use the word in that sense. To me warranty and guarantee are the same.

The question is what is being warranted or what is being guaranteed. There are three different things. You have workmanship, material, and performance.

There may be other things we have not talked about. I think mostly we can say it is workmanship and material.

You do already get warranty and guarantee in almost all of those cases, in almost all cases for workmanship and material?

Dr. DELAUER. Yes.

Senator LEVIN. So, what we are really focusing on is when should we get a warranty or guarantee for performance.

The statute as it exists has two sections, one says you should get a written guarantee, No. 1, that the system and each component thereof were designed and manufactured so as to conform, to the Government performance requirements.

I can see the problem that you have enumerated.

No. 2, however, is that the system and each component thereof, at the time they are provided to the United States, are free from defects in material and workmanship which would cause the system to fail to conform to the Government's performance requirements, but section 2 clearly, I think, says that we are going to get a guarantee that the systems and components are free from all defects in materials and workmanship.

Dr. DELAUER. We do that.

Senator LEVIN. Do you have any problem with subsection 2?

Dr. DELAUER. I don't think so, interpreted as you have interpreted it.

Senator LEVIN. Even though it reads with reference to written guarantee, you don't have any problem?

Dr. DELAUER. No.

Senator LEVIN. Even though the words "would cause the system to fail to conform to the Government's performance requirements" are there because it refers back to the words "defect in materials and workmanship," you have no problem?

Dr. DELAUER. Which limits the application.

Senator LEVIN. I can understand that. I think that is a correct interpretation.

We are really talking about subsection 1 and when should you be required to get a written guarantee on performance standards that are not related to workmanship and material defects?

Dr. DELAUER. That is what we are trying to get at.

Senator LEVIN. I kind of wanted to put it in the subsection chronology because I think Senator Quayle's questions are important to exactly where is it specifically you are recommending that the changes be.

I think they are focused on that subsection 1 in the law. It is not that the word "guarantee" is in there instead of "warranty". It is that subsection 1 is too broad.

Is that a fair statement?

Dr. DeLauer. That is right. There is comment on subsection 2. I think it is in subsection 2 that there is also a caveat that says at no cost to the Government.

Some of our contracts are cost type contracts. That is why in some cases of fixed-price contracts it is easy to do that, but on cost type contracts, we have some problems.

Senator Levin. I don't see this in there, but it may be. I don't see the words "no cost to the Government".

Dr. DeLauer. It is 3(a).

Senator Levin. Section 3 gets to the remedy which is a different issue. I wasn't talking about the remedy. I was talking about the promise.

We have an estimate this morning that the cost, since we are only talking about production contracts in this statute, might be from 1 to 5 percent, roughly, in requiring guarantees on weapon systems and components.

Admiral White. I said under the ones we have now that as an approximation, 1 percent

I said in the others where we don't have them, but, remember, we have them in two-thirds of them. On the other third we don't have any idea.

Senator Levin. You don't know whether it would be in that range or not?

Admiral White. I guess it would be like 1 to 4 or 5 percent.

General Stansberry. Our experience is like 1 to 10 percent. I have a mental mind set at around 5 percent.

Senator Levin. I think that gives us a little framework. We know from that how much more it will cost to buy a weapons system and we have to figure out is it worth it. I don't have any answers to that question at all.

I have some problems with the scope of this statute, too.

Dr. DeLauer. I think it is a little bit broad and I worry about the small business pretty much.

If small business gets involved in the components in the weapons systems, and I am not sure that small business gets involved in that level to any great degree, but I think there are small businesses who bid on components, we have to worry not only about the cost, is it worth it, but we have to worry about the anticompetitive possibility.

As a matter of fact, if we drive people out of competing, we may indeed raise the cost even more than we think. So, there is a double cost.

What is the cost of insurance, in effect? How much would it pay someone to get an insurance policy for that warranty? That is a real cost; 1 percent or 2 percent?

Then if you reduce competition, you have that cost as well because there may be some people who can't compete on that basis. The risk may be too great for them and they can't do it. The insurance company might not even give them a policy.

General STANSBERRY. I just want to add to that cost you have to remember also that suddenly here is a customer who is required by law to purchase that policy. He has no choice.

Senator LEVIN. What is the experience with our allies in terms of warranties?

We have heard some statements about it this morning. Which of our NATO allies require warranties or guarantees?

We are referring now to the performance and we are talking about components.

Dr. DELAUER. Almost everybody has a workmanship and material guarantee.

Senator LEVIN. I am talking about performance.

Dr. DELAUER. I don't know. I don't know what Senator Andrews uses as his data base.

Senator LEVIN. I think it is important we get the experience of those allies. Some of them maybe don't use free enterprise the way we do, but most of them do.

If you could check on our NATO allies as to what do they require in terms of performance and guarantees on components and systems because that is what we are talking about.

Dr. DELAUER. We will check that out.

Senator LEVIN. The Navy has told us how they interpret the word "component" to exclude spare parts.

Is everybody else interpreting it that same way?

Dr. DELAUER. No.

Senator LEVIN. Some of the services include spare parts?

Dr. DELAUER. They have to. The big thing is that the Navy raised the level of definition such that they got the biggest unit as a system.

You take something in the electronics business and the system may indeed be just a radar and there are now major subsystems like the propulsion plant or this and that.

You can't cascade down to where you get out of your problem.

Senator LEVIN. My question is: Do all the services agree that spare parts are different from components?

Dr. DELAUER. No.

Senator LEVIN. Some services interpret the words spare parts and components synonymously; is that right?

Dr. DELAUER. In some cases, yes, they do.

General BABERS. As I think the entire Defense Department has been led to interpret DAR supplement 6 which is leading our breakout effort, components are carried as a repair part.

Senator LEVIN. Some of the services use the word synonymously?

Dr. DELAUER. Yes. especially in engines.

Senator LEVIN. Your 1-percent figure, 150,000 parts, would be vastly increased if that is true. In other words, what are we going to expect on March 14?

How many bushel baskets will we need for waivers will depend on that question.

Has DOD interpreted that word "component" uniformly?

Dr. DELAUER. No.

Senator LEVIN. When are you going to do it?

Dr. DELAUER. Before March 14. I didn't realize we had that much of a problem. Now I do. This is a good hearing.

Senator LEVIN. A good reason for coming to the hearing.

My time is up.

Just to summarize, I think it is important that we push in the direction of requiring quality. I think Senator Andrews is performing a useful function.

Again, I do have questions with the breadth of the law. I thought since it was in the appropriation bill, it would expire. I was wrong. It is permanent law the way it was drafted.

We should be grateful that he is focusing our attention on it. I think also this committee does owe some obligation to make sure that we know what the costs are and do we want to spend the money for the extra cost and we may in many cases.

We may decide it is worth "*x*" percent extra to get a performance guarantee.

We also, I think, should look into the subject of the length of the guarantee, the scope of the guarantee. Those are questions we have not gotten into. It doesn't say anything about how long and to what extent if a spare part fails and an airplane goes down.

Dr. DELAUER. Contingency damage.

Senator LEVIN. Is the person who supplies the component responsible for the whole plane? Now you are talking about insurance. It is a lot more than 1 percent for that component manufacturer.

If the person who gives you the component has to pay for the plane as a result of the component failing, even though it is workmanship material, you have some major insurance cost.

My time has expired. I thank the chairman.

I really want to applaud the extremely orderly way in which this hearing has been conducted, particularly since you and I have been here alone. [Laughter.]

Senator QUAYLE. If they let us stay in this room long enough, we could save the world.

The committee will reconvene at 2 p.m.

[Whereupon, at 1:15 p.m., the committee recessed, to reconvene at 2 p.m., the same day.]

AFTERNOON SESSION

Senator GOLDWATER [presiding]. The meeting will come to order.

In the absence of the chairman who is unavoidably detained, I will read his statement in the record.

The committee meets this afternoon to continue the hearing of this morning on the subject of warranties on weapon systems.

This morning we heard from Senator Mark Andrews. We also received the views of the Department of Defense by the Under Secretary of Defense for Research and Engineering and from representatives of each military department.

This afternoon we will have two panels of witnesses. Our first panel consists of representatives from four trade associations and the FMC Corp.

Our second panel will consist of three representatives of the Aerospace Industries Association.

We will hear from all witnesses on each panel before asking questions.

Because of time limitations, I would ask each witness to submit his statement for the record and it will be printed as if read and to summarize his testimony in as close to 5 minutes as possible.

The first panel consists of Mr. Robert Burt, vice president of the defense equipment group, representing the FMC Corp.

After him will be Mr. James Lincicome, executive vice president and general manager, Motorola Government Electronics Group, representing Electronics Industries Association.

Third will be the National Security Industrial Association represented by Mr. Harry Smith, executive vice president-defense, Westinghouse Electric Corp., and chairman of the board of trustees of NSIA.

The fourth will be the American Electronics Association represented by Mr. Jack Blumenstein, vice president and director of public relations for Rolm Corp.

The fifth and final witness of the first panel will be the National Tooling and Machine Association represented by Mr. William E. Hardman, president and chief operating officer.

We will start, as we always do when I am in the Chair, on the right. Some people say the west, but I call it the right.

Senator LEVIN. Which means we end up on the left, Mr. Chairman.

Senator GOLDWATER. It depends on which way you look and you can't look any way but the left. [Laughter.]

Senator GOLDWATER. We will start with Mr. Burt.

Chairman TOWER. Thank you.

Senator GOLDWATER. Oh! When he stands behind the Chair you can't see him. [Laughter.]

STATEMENT OF ROBERT N. BURT, VICE PRESIDENT AND GENERAL MANAGER OF THE DEFENSE EQUIPMENT GROUP, REPRESENTING FMC CORP.

Mr. BURT. I am pleased on behalf of the FMC Corp. to appear before you to discuss the warranty legislation in section 794 of the fiscal year 1984 DOD Appropriations Act and the proposed implementation guidance from the Department of Defense.

FMC Corp. is a $3.5 billion company with about 38 percent of its sales to defense.

Worldwide we have over 31,000 employees located in 126 manufacturing facilities in 29 States and 15 nations.

FMC makes shipboard gun mounts and missile-launching systems for the Navy, M-113 armored personnel carriers and Bradley fighting vehicles for the Army, and amphibious assault vehicles for the Marine Corps.

Sales approximated $1.3 billion for 1983.

My personal experience with FMC includes experience on both the commercial and defense side. I have headed our corporate planning, agricultural, chemicals and pesticide group and our defense equipment groups. As you can see, I am in favor of defense.

Before joining FMC I was involved in domestic and foreign sales of industrial gases and welding equipment to hospitals and manufacturers throughout the world.

There appears to be widespread belief that defense contractors are unwilling or unable to warranty the quality of the work they perform for the U.S. Government. I believe this basic misconception underlies the warranty provision which you are considering today. I hope that I can correct that assumption.

FMC is not against warranties, but we are concerned that a blanket application of well-intentioned warranty requirements could have two harmful effects on the Nation's defense industry:

A. It could substantially increase our cost of defense spending.

B. And perhaps more important, it could undermine our national strategy of using our advanced technologies to overcome the numerical disadvantages we have against our potential enemies.

When a new weapons system enters production, contractors in each tier from the prime down through the major subs and component suppliers will have no alternative but to increase prices according to perceived risk of performance guarantees and warranties.

For a new system the contractor will have no actual experience on which to price the warranty, but must protect against an open-ended risk.

I would like to examine with you how warranty approaches in the commercial market differ from those that we are being asked to supply in military procurement. The complete list is in my prepared statement. I will just highlight what I believe are the more important aspects.

First, duration. Most commercial warranties are for a specified period, roughly from 2 months to 2 years. The act provides for no duration limitation, although guidelines provide some flexibility.

MAINTENANCE

Commercial warranties on vehicles require maintenance at particular time intervals. The act does not address the possibility of maintenance obligation by the armed services nor does it address potential misuse of the product since only combat damage is not covered.

Modifications of the product not covered by the contractor. Under commercial warranties, modification of the product voids the warranty. This is particularly significant since the weapon system design changes are controlled by the Department of Defense.

I find this most objectionable as a Government warranty requirement; that is, we are being asked to warranty performance of products for which we do not control the final design. Let me give you an example of how this will reduce competition among defense contractors.

Yesterday morning in San Jose we were discussing whether or not we should bid on a combat bulldozer known as ACE. This product was designed as a prototype built by Pacar which is a defense contractor in the northwest part of the United States.

In September of this year the Defense Department is requesting bids or the Army is requesting bids as to who would be willing to build in competition with Pacar. They would like competing bids for the manufacturer of this bulldozer.

Under the provisions of this act, we would be asked to provide performance guarantees even though we were actually looking at a build-to-print type situation. That is only one of many factors that will go into our decision.

You can see it puts us in a very difficult position of trying to guarantee the performance of something on which we have had very little to do with the design.

I also believe that the warranty provisions as they are specified are going to work against the general direction of the various departments of Defense in trying to get more competition on spare parts.

The contractors cannot be expected to bear the responsibility for defects from sources not under his control.

There are also other problems with Government-furnished equipment which is not found in commercial products. There are problems if the product gets returned to be fixed and there are problems in terms of development.

As I testify, we and our suppliers are preparing repriced cost estimates as to what we need to protect against the undefined risk required by the statute.

I would like to emphasize that negotiations for defense contracts are already unreasonably complex compared to negotiations for commercial product. Price negotiations with these new warranty requirements will further complicate this proposal.

We are concerned about the open-endedness of the proposed guidelines. Without the limitations which are normally part of commercial warranties, contractors will be disinclined to incorporate advanced technologies to future systems and components.

FMC and the Army have just gone through the development and the fielding, and a very successful fielding, of the Bradley fighting vehicle which was accomplished under a total systems responsibility clause in the initial contract.

The reliability results of the Bradley fighting vehicle have exceeded requirements by more than 75 percent. The point is that these requirements were specific reliability standards tested in situations where the conditions of use and maintenance were controlled and documented.

Had we been faced with an open-ended performance warranty on the Bradley, we and the Army might have chosen lower technology solutions in several areas.

For example, we may not have chosen to incorporate passive thermal sighting, hydro mechanical transmission, and a fully stabilized 25-millimeter weapon station. The result would have been a significantly less capable weapon system. The gamble paid off.

As I said, the Bradley has exceeded reliability requirements and now constitutes a weapons system which incorporates state-of-the-art technology to offset our potential enemy's numerical superiority.

I believe the immediate impact of implementing this legislation and DOD guidance will be:

A. Increased cost through the risk connected with the open endedness of the proposed guidelines.

B. Reluctance to incorporate state-of-the-art technology in the future systems.

The issue is not whether we will stand behind our workmanship. We already do that with DOD and commercial customers.

The issue is whether or not we can afford to assume open-endedness performance responsibility for system designs we do not control, for components provided by contractors we have not selected or for inappropriate use or maintenance.

There already exists a variety of contracting options which can be tailored to provide the Government reasonable performance protection on a cost-effective basis.

FMC recommends modifications or repeal of the present warranty legislation.

I will be pleased to answer any questions at the conclusion of the panel.

[The prepared statement of Mr. Burt follows:]

PREPARED STATEMENT BY ROBERT N. BURT, VICE PRESIDENT AND GENERAL MANAGER, DEFENSE EQUIPMENT GROUP, FMC CORP.

Mr. Chairman, Members of the Committee, I am pleased, on behalf of FMC Corporation, to appear before you to discuss the warranty legislation in Section 794 of the FY '84 DOD Appropriations Act and the proposed implementing guidance from the Department of Defense.

FMC Corporation is a $3.5 billion dollar company with about 38% of its sales in the defense. Worldwide we have over 31,000 employees located at 126 manufacturing facilities and mines in 29 states and in 15 other nations. Our products include industrial chemicals, agriculture chemicals, petroleum equipment, a variety of agricultural equipment, construction equipment, fire trucks, and other specialty industrial products. We also make shipboard gun mounts and missile lauching systems for the Navy, M113 Armored Personnel Carriers and Bradley Fighting Vehicles for the Army, and Amphibious Vehicles for the Marine Corps.

My personal experience with FMC includes assignments in Corporate Planning, in our Agricultural Chemicals Group, and in our Defense Equipment Group. Before joining FMC I was involved with the domestic and foreign sale of industrial gases and welding equipment to hospitals and manufacturers.

There appears to be a widespread belief that defense contractors are unwilling or unable to warrant the quality of the work that they perform for the United States Government. This basic misconception underlies the warranty provisions which you are considering today and I would like to see this assumption corrected. FMC is not against warranties per se but we are concerned that a "blanket" application of well intended warranty requirements could have two harmful effects on the nation's defense industry effort:

A. It could substantially increase costs in defense spending.

B. It could undermine our national strategy of using technology advancements to overcome numerical disadvantage.

When a new weapons systems enters production, contractors in each tier, from the prime down through major subs and component suppliers, will have no alternative but to increase prices according to the perceived risk of performance guarantees and warranties. The contractor will have had no actual experience on which to price the warranty, but must protect against this open-ended risk. There has been a lot of discussion about how warranty approaches used in the commercial marketplace should be applied to military procurement. Here are some examples of the limitations found in most commercial warranties:

A. Duration: commercial warranties are for a specified period, be it 2 months or 2 years; the Act provides for no durational limitations (although the DOD guidelines do provide some flexibility).

B. Maintenance: commercial warranties on vehicles require maintenance at particular time intervals; the Act does not address even the possibility of maintenance obligations by Armed Services.

C. Abuse or Misuse of the Product: under commercial warranties, abuse or misuse voids the warranty; the only similar limitation in the Appropriations Act was the recognition that combat damage is not covered.

D. Modifications of the Product Not Authorized by the Contractor: under commercial warranties modification of the product voids the warranty. This is particularly

significant since the weapon system design changes are controlled by the Department of Defense.

For example, we have received a request from the Army to convert an M113 troop carrier into a "Smoke Generator Carrier," and were supplied the design. After reviewing the design we pointed out that the vehicle would no longer be able to swim due to its extra weight.

E. Incorporation of Spare Parts into the System: commercial warranties are voided when the spare part is not procured from an authorized dealer or the original manufacturer. Current DOD efforts to break out spare parts procurements from initial suppliers would conflict with performance guarantees. The contractor cannot be expected to bear the responsibility for defects from sources not under his control.

F. Government Furnished Property: normally there are no government furnished parts used in commercial equipment. In military procurement this creates significant issues of interface responsibility, another area outside the prime contractor's control.

G. Commercial warranties generally require the consumer to return the product or defective part at his expense. Then the supplier determines whether the part is covered by warranty. The proposed guidelines seem to allow the government unilateral determination of liability. The unavoidable result of an increased administrative burden and higher risks will be a reduction in the number of subcontractors willing or capable of complying with guarantees on large weapon systems. Further, the potential liability for loss of a total system due to failure of a particular part could be unacceptable for small suppliers of parts.

H. With commercial products, normally the company fully develops and tests its own controlled design before offering the product to the market, and during the development phase warranties do not exist. The procurement of military systems usually requires the initiation of production concurrent with the completion of development and testing. To mandate fixed price warrantly requirements before developmental efforts are complete, development (normally being performed on a cost reimbursement basis) appears to be an appropriate risk allocation, and thus could seriously impair the design to production cycle, lengthening its duration and increasing its costs.

As I testify, we and our suppliers are preparing revised cost estimates. The need to protect against undefined risk will generate price increases throughout all contracting tiers. I would like to emphasize that negotiations for defense contracts are already unreasonably complex compared to negotiations for commercial products. Price negotiations over these new warrantly requirements will further complicate this process.

We are concerned about the open-endedness of the proposed guidelines. Without the limitations, which are normally part of commercial warranties, contractors will be disinclined to incorporate advanced technology into future systems and components.

FMC and the Army have just gone through the development and fielding of the BFV which was accomplished under a total systems responsibility clause in the initial contracts. The reliability results of the BFV have exceeded requirements by more than 75%.

The point is these requirements were specific reliability standards tested in situations where the conditions of use and maintenance were controlled and documented.

Had we been faced with an open-ended performance warranty on the Bradley, we and the Army might have chosen lower technology solutions in several areas. For example, we may have chosen not to incorporate: passive thermal sighting, hydro mechanical transmission; and fully stabilized 25mm weapon station.

The result would have been a significantly less capable weapon system for our soldiers. But the gamble, if you care to consider it such, paid off. As I said, the Bradley has exceeded reliability requirements and now constitutes a weapon system which incorporates state of the art technology to offset our potential enemy's numerical superiority.

As I stated initially, I believe the immediate effect of implementing this warranty legislation and DOD guidance will be:

A. Increased costs due to the risk connected with the open-endedness of the proposed guidelines.

B. And, a reluctance to incorporate state-of-the-art technology in future systems.

The issue is not whether we will stand behind our workmanship; we already to that with both DOD and commercial customers. The issue is whether or not we can afford to assume open-ended performance responsibility for system designs we do not control, for components provided by subcontractors we have not selected or for inappropriate use or maintenance.

There already exists a variety of contracting options which can be specifically tailored to provide the government reasonable performance protection on a cost effective basis. FMC recommends modification or repeal of the present warranty legislation.

I would be pleased to answer any questions.

Chairman TOWER. Thank you very much.

Mr. Lincicome?

STATEMENT OF JAMES R. LINCICOME, EXECUTIVE VICE PRESIDENT AND GENERAL MANAGER, MOTOROLA GOVERNMENT ELECTRONICS GROUP, REPRESENTING ELECTRONICS INDUSTRIES ASSOCIATION

Mr. LINCICOME. Thank you, Mr. Chairman.

I would like for my full statement to be entered into the record. I will merely highlight from that statement.

I am James Lincicome, executive vice president and general manager of the Government Electronics Group of Motorola. I am also a member of the Board of Directors of the Government Division of the Electronics Industries Association.

This Association is a major national trade association representing all elements of the electronics industry, including defense electronics firms which supply high-technology equipment and systems to the Government.

The defense sector of the electronics industry is represented through the Association's Government Division. My statement today reflects the views of the member companies of this EIA Division.

Our position, briefly stated, is that we believe warranties for defense electronics systems and components are appropriate and effective when based on individual determinations of their applicability by DOD.

We do not believe mandatory across-the-board performance guarantees of the type required by section 794 are in the Government's best interest or are workable.

CUSTOMARY WARRANTIES

There is a widespread misconception that the defense industry is unwilling to provide warranties to its Government customers. The fact is that the defense electronics industry routinely can and does offer warranty coverage to the Government on programs that have reached a state of design maturity and volume production.

Electronic weapon systems and their subsystems are all presently covered by one type of warranty in the DOD "Inspection and Acceptance" clause. These systems may be covered by additional warranty when the buying agency determines that it would be in the Government's interest.

PERFORMANCE GUARANTEES

The EIA has no doubt that the motivation behind the mandatory guarantees provisions of section 794 is a desire to enhance the performance of weapon systems which DOD procures. That is a desire that the electronic industry fully supports.

Unfortunately, section 794 is unworkable because it requires industry to guarantee the performance of designs which the industry does not alone control, designs which in many instances, for example, second-source production and competitive awards, are not the product of the company being asked under section 794 to extend the performance guarantee.

The problem this poses for the defense acquisition process is both immediate and burdensome.

EFFECT ON PUBLIC POLICIES

There are several public policies which we believe are adversely affected by section 794. I will enumerate three.

First, section 794 calls for guarantees which represent an unprecedented expansion of post-acceptance contingent liability facing all tiers of contractors.

The guarantees will tend to create liability and added cost at each contracting tier. The pricing of these risks represents contingencies which will likely have a multiplying effect. These costs will be paid by the taxpayer in higher prices for defense systems and components.

Next, the companies best able, if able at all, to guarantee the performance of weapons systems, subsystems and components in production are the companies who designed them—that is, the incumbents.

Section 794 thus acts to lessen competition by favoring incumbent contractors.

Further, prime contractors will be motivated to buy only from well-established suppliers with substantial financial resources which enable them to shoulder long-term post-acceptance liabilities.

It is our judgment that small businesses will be adversely impacted. Where suppliers cannot be found, prime contractors will have no choice but to bring work in-house, attenuating the industrial base.

Third, section 794 favors older rather than leading edge technological solutions to defense needs. This cannot be in the best interests of national defense. U.S. defense policy recognizes that technological superiority is the most affordable counter to the numerical advantage of the Soviet bloc. Section 794 performance guarantees are contrary to this policy.

In conclusion, the Electronics Industries Association believes that section 794 warranty provisions are in fact unworkable and their implementation will be extremely burdensome and will reduce the subcontractor and supplier base and add significantly to DOD procurement costs.

REPEAL URGED

Thus, EIA urges immediate repeal of section 794 and supports the Department of Defense's recommendations of this morning for a more definitive Defense Acquisition Regulation covering the application of warranties.

Thank you.

[The prepared statement of Mr. Lincicome follows:]

PREPARED STATEMENT OF JAMES R. LINCICOME, EXECUTIVE VICE PRESIDENT, MOTOROLA INC., ON BEHALF OF THE ELECTRONIC INDUSTRIES ASSOCIATION

Mr. Chairman and members of the committee, I am Jim Lincicome, executive vice president and general manager of the Government Electronics Group of Motorola. I am also a member of the board of directors of the government division of the Electronic Industries Association (EIA). This association is a major national trade association representing all elements of the electronic industry, including defense electronics firms which supply high technology defense electronic equipment and systems to the government.

The defense sector of the electronic industry is represented through the association's government division and my statement today reflects the views of the member companies of this EIA division. It is also consistent with the EIA letter of September 23, 1983 to Senator Stevens and the members of the Senate Appropriations Defense Subcommittee on this subject (copy attached).

Our position, simply stated, is that we believe warranties for defense electronic systems and components are appropriate and effective when based on individual determinations of their applicability. We do not believe mandatory, across-the-board performance guarantees of the type required by section 794 of Public Law 98-212 are in the government's best interest or are workable.

I hasten to add that EIA member firms routinely offer warranties to DOD and its prime contractors. Where commercial products under the manufacturers' design control are procured by or for DOD, a commercial warranty is ordinarily available. Where the product is manufactured to DOD-controlled designs, as is the case for weapon systems, industry firms frequently offer warranties that products are free of defects in materials and workmanship and in compliance with specifications. The latter applies when the criteria of the defense acquisition regulation (DAR) regarding warranties are met.

My colleagues in industry and I share a conviction that all customers are entitled to high quality, reliable products. We also know that a warranty by itself will not ensure a quality product, and is of no value to a military serviceman in the field. Therefore, many of the firms in our industry purse quality improvement initiatives under names such as zero defects, participative management and quality circles. These programs are geared to continually improve product quality from the viewpoint of users.

The EIA has no doubt that the motivation behind the mandatory guarantee provision of section 794 is a desire to enhance the performance of weapon systems which DOD procures. That is a desire the electronic industry fully supports. Unforunately section 794 is misplaced because it requires industry to guarantee the performance of designs which the industry does not alone control; design which in many circumstances are not the product of the company being asked, under section 794, to extend the performance guarantee. The problems this poses for the defense acquisition process are both immediate and burdensome.

It is EIA's opinion that the cost of implementation, like the liability section 794 poses is inestimable and out of proportion to the benefit to the government.

EIA notes that the defense supplemental appropriation request proposes repeal of section 794 and that similar language is included in the FY 85 defense appropriation bill. We endorse speedy repeal action. We also urge extension of the blanket waiver now in effect, pending repeal. That waiver expires on March 14, 1984.

Mandatory weapon system performance guarantees by manufacturers are inappropriate when manufacturers control neither the product development process nor use conditions.

Section 794 requires that the weapon system prime contractor (or other involved contractors) provide (1) a written guarantee that each system and component "was designed and manufactured so as to conform to the government's performance requirements", and (2) a guarantee as to defects in materials and workmanship. The prime or other contractor is to bear the cost of all work required to repair or replace parts necessary to achieve performance requirements and to correct defects.

System performance guarantees are to be distinguished from warranties against defects in materials and worksmanship—the latter being the prevalent commercial form of warranty. In fact, commerical warranties specifically exclude fitness for intended use; a warranty akin to the performance guarantee of section 794. Commercial warranties are thus limited in scope even though the manufacturer has total control of product design, development, testing, and modifications.

It is essential to recognize that weapon system performance encompasses end-use operational characteristics for which testing may be impossible, impractical or not

funded.[1] Compliance with such requirements are often established by analysis as the only available option.

Further, the DOD manages and controls much of the development process itself in accordance with procedures which have been evolved and institutionalized over many years. Industry is a partner in this process, which we fully support but do not fully control. For example, DOD establishes technical specifications for weapon systems and their subsystems, as well as for components, and even piece parts. DOD determines development schedules and sets expenditure levels. It determines or approves the quantity of development test hardware and approves or determines the analyses and tests to be required of the developer. DOD performs the operational system testing prior to a production decision. DOD reviews and approves the final designs. The system prime contractor and subcontractors are responsible to meet factory test conditions approved to DOD. During both the development process and production, DOD has unilateral authority to, and frequently does, order the contractor to make changes in designs, drawings and specifications. DOD may, for a variety of reasons, take custody of the technical data package which defines the configuration of the system, subsystem and components, and make whatever changes it feels appropriate.

This development process, which is tailored to and appropriate for development of complex weapon systems, is in sharp contrast to commercial practice where the manufacturer controls all elements of the process. Commercially the manufacturer produces its own product in quantity and utilizes rapid feedback from users and customers to effect product improvements.

The military systems developer is able to manufacture its product only if and when DOD provides funding to do so, and in the quantities DOD prescribes. Such quantities are often quite low. If the item is high technology and has never before been produced, there will be no operational experience to use as a basis for estimating the fair and reasonable liability associated with performance guarantees in the severe and complex operational scenarios typical of weapons systems. Moreover, because DOD's supply and logistic system spans the globe, and many systems or subsystems go into DOD's inventory, rather than seeming immediate field use, feedback from end users to the manufacturer is frequently nonexistent, and is at best less frequent and less rapid than in the commercial environment. And even if feedback is received from users, changes to improve the product can be made only if authorized by the government.

There is little similarity between commercial product development and the development of weapons systems. DOD's existing policy guidance on warranties appropriately recognizes the differences. Section 794 does not.

It is inappropriate as provided by section 794, to require a production prime contractor or sub-contractor, to be sole guarantor of the performance of a complex defense system, subsystem or component designed in the environment described. It is not reasonable to require a production contractor or supplier to guarantee the performance of a system or component, when the design is provided by the government, as is the case for competitive production procurements. Under the latter circumstances the bidders, other than the system or component developer, have insufficient opportunity to assess system performance before proposals with performance guarantees must be submitted.

Yet our industry can and does warrant weapon systems and their components in the circumstances now described by DOD in its defense acquisition regulation (DAR). The DAR sets forth sound criteria, to be applied with judgment, in each procurement situation, to determine whether a warranty should be required. These criteria include evaluation of:

The nature of the item;
Trade practice;
The cost of the warranty to the government, in relation to benefit; and
The government's ability to enforce any warranty.

The scope of the warranty can include, under the DAR, materials, workmanship, and compliance with specifications.

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[1] For example, the mission of an airborne radar subsystem might be to detect specific enemy vehicles at a maximum range during combinations of adverse weather conditions when mounted on aircraft engaging in certain flight maneuvers, and to do so in the presence of enemy jamming. Normally DOD and the prime or subcontractor agree on certain factory test conditions under which to measure the radar's compliance with specifications. The tests are made compatible with but do not necessarily duplicate all combinations of conditions experienced in field performance.

The electronics industry sees no impediment to expanding the application of DAR warranties to larger numbers of contracts for electronic equipment and systems. This should be done, in our judgment, only when evaluation shows that it is cost-effective and of benefit to DOD and the government under the criteria the DAR provides.

We also believe that it is significant that the new federal acquisition regulation (FAR) contains, in part 11, a policy to encourage the acquisition of commercial products to serve government's needs. This policy calls for consideration by government acquisition officials of the use of existing commercial products and commercial supply and maintenance capabilities as well as commercial warranties. The far regulation, effective on April 1, 1984 and applicable to DOD provides a vehicle for the expanded application of warranties in appropriate circumstances. The government will have the full support of our industry in this initiative.

SECTION 794 IS CONTRARY TO WELL-ESTABLISHED PUBLIC POLICIES

There are several public policies which we believe are adversely affected by section 794.

(A) Section 794 will increase the cost of national defense

As discussed previously, section 794 calls for guarantees which represent an unprecedented expansion of post-acceptance contingent liabilities facing all tiers of contractors. The cost risk of this liability will most assuredly find its way into the pricing of covered weapons system contracts and subcontracts.

At each tier, contractors will be pricing the risk of the performance guarantees they are required to provide. Even if subsystems and component suppliers extend the section 794 guarantees directly to the U.S. Government, and it is questionable whether that is practical, such guarantees are not totally independent. Thus the guarantees will tend to create liability and added cost at each contracting tier. The pricing of these risks represents contingencies which will likely have a multiplying effect.

The Commission on Government Procurement, chartered by the Congress, studied a similar matter; that of post-acceptance liability for loss or damage to government property in a multi-tier government contract environment. They concluded that it would be cheaper for the government to act as a self-insurer than to shift the risk to private contractors.[2] That has been DOD policy except for post acceptance latent defects and warranties applied under the circumstances the DAR provides. Section 794 is a departure from these sound policies.

It seems clear that section 794 will create increased costs to cover potentially large contingent liabilities. These costs will be paid by the taxpayer in higher prices for defense systems and components.

(B) Section 794 will reduce competition, small business participation and the industrial base

The companies best able, if able at all, to guarantee the performance of weapon systems, subsystems, and components in production are the companies who designed them, i.e. the incumbents. Section 794 thus acts to lessen competition by favoring incumbent contractors.

Further, prime contractors will be motivated to buy only from well-established suppliers with substantial financial resources which enable them to shoulder long-term, post-acceptance liabilities. It is our judgment that small businesses will be adversely impacted. Where suppliers cannot be found, prime contractors will have no choice but to bring work "in-house", attenuating the industrial base.

(C) Section 794 will deter contractors from offering innovative approaches to defense needs

Section 794 favors well-established rather than leading edge technological solutions to defense needs. This cannot be in the best interests of national defense. U.S. defense policy recognizes that technological superiority is the most affordable counter to numerical advantage of the Soviet bloc. Section 794 performance guarantees are contrary to this policy.

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[2] Report of the Commission on Government Procurement, Volume 4, Chapter 2. "Self-Insurance of Government Property". (December 1972)

THE WAIVER MECHANISM OF SECTION 794 IS UNWIELDY

Section 794 allows the Secretary of Defense to waive the guarantee provision if he determines that a waiver is necessary in the interest of national defense or cost effectiveness. He must notify the armed services and appropriation commttees of the Senate and the House of his intention to waive. The use of the word "intention" indicates that congressional notice is required in advance of issuing the waiver. The waiver in turn could be a precondition to a contract award. The practical, administrative problems entailed in effecting waivers on a contract by contract basis—from the need for waivers as perceived by acquisition officials, to notices from the Secretary of Defense to the committees of Congress—seem unsuited to the need considering the number of contract actions likely to be involved.

In conclusion, Mr. Chairman, and members of the committee, there is a widespread misconception that the defense industry is unwilling to provide warranties to its government customers. The fact is that the defense electronics industry routinely does or can offer warranty coverage to the government on programs that have reached a state of design maturity and volume production. Electronic weapon systems and their subsystems are all presently covered by one type of warranty in the DOD "inspection and acceptance clause." These systems may be covered by an additional warranty when the buying agency determines that it would be in the government's interest. This overall approach to warranties is appropriate and workable, attributes which are not shared by section 794.

Attachment.

ELECTRONIC INDUSTRIES ASSOCIATION,
September 23, 1983.

Hon. TED STEVENS,
Chairman, Senate Appropriations Defense Subcommittee,
U.S. Senate, Washington, D.C.

DEAR SENATOR STEVENS: The Electronic Industries Association (EIA) has noted recent hearings by the Subcommittee on the subject of warranties on military equipment, and the fact that Senator Mark Andrews has expressed the intention of requiring warranties on all future buys of military equipment. Many of our 400 member companies are engaged in providing quality products to the Defense Department by contract, and it is on their behalf that we offer the following comments.

EIA fully supports the idea that the United States government should buy the products it needs at the lowest possible cost with the highest quality and on-time delivery. However, for reasons expressed in this letter, we respectfully urge you not to support any such warranty provision when it is introduced in consideration of Defense Appropriations legislation.

We recognize that in appropriate circumstances, warranties for defense equipment should be offered to, and accepted by, the Defense Department for such equipment for which a substantial volume of performance field data has been developed. However, consideration must be given to the effect of the warranty cost on the price of the contract, as well as the government's own performance evaluation criteria under which sound business judgment would be utilized to determine the value relationship. There may well be situations in which it would not be economical for the government to demand and receive a warranty.

Warranties are worthwhile only if they are worth the added costs. warranties of standard commercial products are based on years of use by the ultimate user and years of study of product life, replacement or repair costs and accurate service repair records. The warranty is then projected over a number of years and numerous contracts for many customers. Warranties in defense equipment apply only to specific products during a specific time, and may therefore be substantially more costly.

The business and technical requirements of the commercial sector vary greatly from those experienced in the defense procurement environment. Commercial manufacturers specify operating instructions in connection with product warranties which restrict their utilization and the environment in which these products are operated. The setting of similar restrictions by manufacturers of military equipment would clearly not be possible. Maintenance and repair of commercial equipment is restricted in terms of who may perform the work, where it may be performed (generally at contractor facilities), and what parts may be utilized in this performance. Operation and maintenance of defense systems and equipment are usually very different, and maintenance cannot always be performed at contractor facilities or under contractor-controlled conditions.

A commercial product manufacturer also enjoys complete freedom to make design changes he deems necessary, while the government exercises overriding control of design, testing, quality assurance, and acceptance criteria for military products. Even when accepting contractors' warranties on proven products in accordance with the Defense Acquisition Regulations (DAR), the government usually continues to use the same costly test and acceptance procedures on current contracts that were used in the design and development contracts.

Subsystems and component manufacturers will not run the risk of replacing the total end product and will include substantial warranty contingency in their prices. The result could well be a costly pyramiding of warranty costs.

EIA recognizes the concerns expressed by members of the Subcommittee that defense equipment be reliable and be procured on the most cost effective terms. We believe, however, that the record developed to date is insufficient to establish that a statutory requirement for warranties on all defense buys must be enacted. Consideration should first be given to further hearings focusing on how commercial warranties are developed using extensive field tests, long production runs, and numerous customers in a projected market over which to allocate the costs.

The government's primary concern should be the delivery of products to meet its requirements. The use of warranties should be but one tool available to government managers if sound business judgment should so dictate.

Our representatives would be pleased to meet with you, other committee members, or appropriate staff persons to further discuss and clarify our views.

Sincerely,

JEAN A. CAFFIAUX,
Vice President, Government Division.

STATEMENT FOR INCLUSION IN THE RECORD

HEARINGS OF THE SENATE APPROPRIATIONS DEFENSE SUBCOMMITTEE WARRANTIES ON MILITARY EQUIPMENT, SEPTEMBER 14, 1983

The Electronic Industries Association (EIA) has noted recent hearings by the Subcommittee on the subject of warranties on military equipment, and the fact that Senator Mark Andrews has expressed the intention of requiring warranties on all future buys of military equipment. Many of our 400 member companies are engaged in providing quality products to the Defense Department by contract, and it is on their behalf that we offer the following comments.

EIA fully supports the idea that the United States government should buy the products it needs at the lowest possible cost with the highest quality and on-time delivery. However, for reasons expressed in this letter, we do not suppport the introduction of the warranty provisions currently being considered in the Defense Appropriations legislation.

We recognize that in appropriate circumstances, warranties for defense equipment should be offered to, and accepted by, the Defense Department for such equipment for which a substantial volume of performance field data has been developed. However, consideration must be given to the effect of the warranty cost on the price of the contract, as well as the government's own performance evaluation criteria under which sound business judgment would be utilized to determine the value relationship. There may well be situations in which it would not be cost effective for the government to demand and receive a warranty.

Warranties of standard commercial products are based on years of use by the ultimate user and years of study of product life, replacement or repair costs and accurate service repair records. The cost of the warranty is then projected over a number of years and numerous contracts for many customers. Warranties in defense equipment, however, would apply only to a limited number of products and would therefore be substantially more costly.

The business and technical requirements of the commercial sector vary greatly from those experienced in the defense procurement environment. Commercial manufacturers specify operating instructions in connection with product warranties which restrict their utilization and the environment in which these products are operated. The setting of similar restrictions by manufacturers of military equipment would clearly not be possible. Maintenance and repair of commercial equipment can be more effectively controlled in terms of who may perform the work, where it may be performed (generally at contractor facilities), and what replacement parts may be utilized. However, operation and maintenance of defense systems and equipment are

usually very different, and maintenance can not always be performed at contractor facilities under predictable or contractor controlled conditions.

A commercial product manufacturer can exercise complete freedom to make design changes he deems necessary, while the government retains overriding control of design, testing, quality assurance, and acceptance criteria for military products. Even when accepting contractors' warranties on proven products in accordance with the Defense Acquisition Regulations (DAR), the government usually continues to use the same costly test and acceptance procedures on current contracts that were used in the design and development contracts.

Suppliers of defense subsystems and components will not risk the cost of replacing the total end product without including a substantial warranty contingency in their prices. The result could well be a costly pyramiding of warranty costs.

We recognize and support the concerns expressed by members of the Subcommittee that defense equipment be reliable and be procured on the most cost effective terms. We believe, however, that the record developed to date is insufficient to establish that the proposed statutory requirement for warranties on all defense buys must be enacted. We recommend consideration be given to further hearings focusing on how commercial warranties are developed using extensive field tests, long production runs, and numerous customers in a projected market over which to allocate the costs.

The government's primary concern should be the acquisition of quality products to meet its requirements. The use of warranties should be but one tool available to government managers if sound business judgment should so dictate.

Our representatives would be pleased to meet with committee members, or appropriate staff persons to further discuss and clarify our views.

Chairman TOWER. Thank you very much, Mr. Lincicome.

Mr. Smith?

STATEMENT OF HARRY B. SMITH, EXECUTIVE VICE PRESIDENT-DEFENSE, WESTINGHOUSE ELECTRIC CORP., CHAIRMAN, BOARD OF TRUSTEES, NSIA, REPRESENTING NATIONAL SECURITY INDUSTRIAL ASSOCIATION

Mr. SMITH. Mr. Chairman and members of the Armed Services Committee, I am Harry Smith, normally executive vice president of Westinghouse, but today I am here representing NSIA since I am chairman of the board of trustees.

Fortunately, the views that I will express in behalf of NSIA correspond exactly to my views as an individual having 32 years of experience in the defense business, all with Westinghouse.

Now, many of the NSIA companies, and there are about 300, span the role from large companies to small companies and each of us, including Westinghouse, must act as subcontractors to airframe primes and in turn have passed down work to lower tier subcontractors and suppliers.

So, I would like to focus my remarks, after a few preliminary additional remarks, on the situation in regard to subcontracting and the flow down of liability to subcontractors because I think that is really the boobytrap in this whole law (794).

Then I will touch briefly on the subject of second source and what this law might do to competition because I think these are related.

First, let me say that while we all believe in the concept of warranties, as almost everyone has said, when they are workable, we do not feel that 794 represents any progress.

To the contrary, we cannot support the kinds of performance guarantees mandated because we think that they will add to the complexity of our contracting process and will result in unnecessary cost and money that could very easily and more beneficially

be spent in other areas, particularly in this time when we are trying to catch up with the Soviets.

We feel that the law is unnecessary because, as we heard this morning, the Department of Defense does have the mechanism to implement the spirit and all of the advantages proposed by the legislation.

Now, there are two other obvious things which I will simply reiterate.

The big objection to contractors assuming such broad performance liabilities is that we have no control over how the equipment is used by the services or how it is maintained. That is so obvious I hardly need to add to that.

Furthermore, there is no dependable way of collecting the information to really assess liability in actual practice because many times the equipment is destroyed or it is almost impossible to determine what caused the failure.

Now, with this background, I would like to talk about how this applies to subcontractors and particularly small business and I might even add small disadvantaged business which would bear the brunt of these provisions.

I think we all know that to get this kind of performance guarantee it will cost and cost considerably, but the real world problem with this is how we as a contractor pass this down to subcontractors and eventually to suppliers.

Now, this involves a precise determination of how the warranty or the guarantee is going to be interpreted and implemented and this in turn involves a negotiation with each of the tiers of the subcontracting process.

Now, because we are not perfect at predicting performance, we will have contingent liability which we will have to take in the form of a warranty reserve or performance reserve, call it what you will.

This means we are tying up money in a reserve that could be used for automating equipment and many other practical uses. Whether we take this out in the form of a bond, I think it all amounts to the same thing.

Now, this is particularly onerous to our subcontractors who really can't afford to set aside money as a reserve because they need to invest it in capital improvements.

I think furthermore they will have to show on the financial statements this kind of liability because the real problem with this liability is that you incur in 1 year and you don't know where you stand until 5 or 10 years later.

So, with this sword hanging over the head of a small contractor, I think he is going to have two alternatives:

Not to bother with defense business, which I don't think we want. We in NSIA are particularly concerned with the effect it will have on the erosion of the industrial base because we do depend on subcontractors and lower tier contractors.

Second, those that do take on this liability and have to show it on their financial statement, according to accounting practices, will have extreme difficulty in raising capital, floating stock issues and the like with this liability showing on their statement.

So, we see a disaster for small business.

I have not yet mentioned and I will reiterate what my colleague to my left just said: There will be a great temptation for a prime contractor to do more work in-house and not take the trouble to go through all this negotiation; if we have to assume the risk, we would rather assume it directly so that we can have at least more control until we ship the product.

I think all of this is bad news for small business and I think it is particularly onerous for disadvantaged small business.

Related to that is the whole issue of breakout, second source, leader-follower. This is the case where we have to produce something that was designed by some other contractor.

We already discussed this morning the case where the Government does much of the design, but I think we have an equal or perhaps even more serious instance when some other contractor performs the design and we have a competition, either second source or something along that line.

It will be extremely difficult for the winner of the second source to not recognize in his price the liability that this performance guarantee will impose. I think this will lead to less competition rather than more competition.

I think overall this whole climate will be one of discouraging people from pursuing rigorously the defense business like we need.

I might just close on a personal note. A word was used today to imply, and I don't remember the word, but it was used by Senator Andrews to imply people who talk about these subjects don't know much about them. [Later addition: the word was "slicks."]

I would like to assure you that I have been very intimately involved in all these things. I am an engineer by background, the sort of engineer that Senator Andrews was talking about, and I am happy to say that I am going to receive the Pioneer Award this year for development of pulse doppler radar.

If we had had to live under these onerous provisions, I doubt if many of the production radars like in AWACS, the F–16, and B–1 would be capable of performing as they are today.

Thank you.

[The prepared statement of Mr. Smith follows:]

PREPARED STATEMENT OF NATIONAL SECURITY INDUSTRIAL ASSOCIATION BY H.B. SMITH, CHAIRMAN, BOARD OF TRUSTEES

Mr. Chairman and members of the Armed Services Committee. I am Harry Smith, Executive Vice President of Westinghouse and Chairman of the Board of Trustees of the NSIA.

On behalf of the National Security Industrial Association, it is my privilege to present the views of the association on Section 794 of The Defense Appropriation Act for 1984.

The National Security Industrial Association (NSIA) is a national organization of more than 300 manufacturing, research, and service companies of all sizes and from all segments of industry interested in and related to our national security. With me today is David M.F. Lambert, the Vice Chairman of the Smaller Company Subcommittee of the NSIA Procurement Committee, Mr. James Lovett, and Mr. Wilsie Adams, also of the NSIA Procurement Committee.

NSIA serves essentially as a two-way communications medium between government—primary defense—and the industry which supports it. A copy of our Annual Report, which includes a list of our members has been furnished to the committee.

Many of our member companies, including Westinghouse, must operate as both prime contractors and subcontractors and realize the problems associated with both roles. Our position today is clear and straightforward. We support warranties where

they have been determined to be workable for both parties and where they will effectively improve the readiness posture of our national defense. However, we cannot in good conscience support guarantees that are mandated for across-the-board implementation. Such directives and laws, as Section 794, cannot realistically work because of the all encompassing complexities associated with the performance guarantee. Our concern is not with "guarantee" per se, but with the specific guarantees and circumstances of their use dictated by the statute.

It is fortunate that this Committee has decided to review Section 794 of P.L. 98-212. Section 794 lacks the necessary preciseness for implementation, will be costly, and is an administratively unworkable public law that will have a serious and far-reaching negative impact on the ability of our companies to furnish the type and quality of weapon systems so necessary for our Nation's defense.

Due to the time constraints, I limit my address to several of the many problem areas which I think should be of great concern to this Committee. My presentation should help serve as the basis for considering either continuation of the DOD moratorium or immediate repeal of Section 794. Such action would provide time for the consideration of more appropriate legislation should the Committee decide that is required.

The language of Section 794 represents a marked departure from commercial guarantees which generally are limited to specific areas of coverage. Section 794 requires a comprehensive performance guarantee by every weapon system contractor. The guarantee will ultimately be passed on to all the subcontractors involved in the manufacture of existing or future weapon systems including their subsystems and all components of those subsystems. Specifically, the guarantee provides that the weapon system and each component of the weapons systems is designed and manufactured to meet the performance requirements set out in the government production contract and guarantees the product shall be free of defects in material and workmanship which would cause the system to fail to conform to the government performance requirements. The guarantee will require the contractor promptly to repair or replace parts as necessary or to reimburse the U.S. for procurement of such repair or replacement from another source. This all inclusive guarantee must be included in every contract awarded after the enactment of P.L. 98-212 which has been interpreted by DOD to include any contract modification resulting from the exercise of an option, any order under a Basic Ordering Agreement, or any amendment to existing fixed priced or cost reimbursement production contracts. (See DOD proposed Regulations: Attachment A). The proposed implementing regulations will only exacerbate the insurmountable problems of costing and administering acquisition contracts. Identifying the warranty liabilities in the event there is a failure of the weapon system; any of its subsystems or components of subsystems may be administratively impracticable due to its usage, design control, and field maintenance.

No one would expect realistically one contractor to guarantee that a weapon system designed by another contractor or by the Government itself would perform in any specified manner. This explains why in a large number of contractual situations a contractor has not been asked historically to guarantee a design. Indeed, pure performance specifications are rare. In large numbers of contracts the design is furnished by the Government or detailed specifications are provided and the contractor's obligation is to "build to print" with the guarantee flowing in the opposite direction, i.e., the Government warrants that if the contractor complies with the specifications, using the specified materials and designs, and performs with quality workmanship, a satisfactory product will result. This is especially true and necessary in contracts where the Government is enhancing competition by utilizing such historical techniques as the so called "leader-follower" or seond sourcing in which the following or additional sources are expected-indeed required-to reproduce the designs of others furnished by the Government. Virtually every weapons system or component would be a "sole source" contract if every contractor were required to warrant the designs.

It must be recognized that virtually all defense contractors and members of our association do in fact provide appropriate guarantees in many of the present weapons systems contracts. The DOD and each of the Services have long required appropriate guarantees. There are extensive regulations on the subject and both standard and specifically negotiated guarantee provisions have been in use for many years. Defense contractors routinely offer warranties that their products are free of defects in material and workmanship at the time of delivery and agree to repair or replace these defects with prompt notification. In addition, where commercial type products are sold to DOD, our contractors normally provide commercial type warranties.

When warranties are appropriate, supporting data is available to adequately project the financial liability associated with the risks taken. However, mandatory

inclusion of performance guarantees in all DOD contracts would improperly shift the products risks to the party with the least control over the design, operation and use of the equipment being warranted. Under these circumstances, appropriate and justifiable cost projections of the risk would be impractical and virtually impossible.

Recognizing the vagueness of Section 794, and the fact that the warranty will be passed down to subcontractors, let us review some of the more apparent costing and administrative problems associated with the implementation of Section 794 of PL 98-212:

Any all inclusive performance guarantee purchased by the Government must have a dollar value reflecting the cost of the guarantees as it will apply to the weapon systems, each of its subsystems and each component or part of that subsystem. In order to establish the value of these performance guarantees at the prime contractor level and each of the subcontract tiers, each of the guarantees must precisely define the terms of the guarantee to properly reflect contingent liabilities based on available performance experience. As the performance guarantee risks are passed down through the many subcontract tiers for the subsystems components, the interrelationship of each guarantee, one-to-the-other, becomes more complex and therefore will require an increase in each of the producer's contingency reserves for the replacement of the weapon system, subsystem or component. The price of each subcontract, extending down to all tiers, must be changed to reflect the added total costs which in turn must be allocated to each unit produced and delivered under the contract. Any increase or decrease in the number of units purchased will tend to substantially increase or decrease the reserve for contract guarantee costs thus requiring a variable contingency reserve. It will be extremely difficult, if not impossible, to agree on the applicable reserve for warranty costs in negotiating the required contract price changes at the many levels of the manufacturing process due to lack of experience and support data available.

Virtually all types of contractors, large, small, and small disadvantaged businesses, will be required to assume the financial burdens associated with being prime or subcontractors. Should the vendor or subcontractor be unwilling or unable to share the risk, the prime contractor, in order to participate as part of the Defense Industrial Base, will be required by law to assume it.

The procedure to identify conformance or lack of conformance under the guarantee is unclear. Many weapon system performance criteria guarantees can only be determined by test procedures for the total system, or individual subsystems, and components. Liability for failures cannot be determined or identified when the weapon system is tested operationally or destroyed. Proof of and specific cause of the chain of causation for any failure must be determined in each case to impose the statutory liability on the prime contractor and/or the subcontractors providing the subsystem or components.

Section 794 is a marked departure from the time tested Department of Defense policies and procedures in the Defense Procurement Regulations. Under these provisions warranties are purchased by the government only in situations which are cost effective, clearly understandable, and operationally workable under the circumstances.

The statute will inhibit competition not only at the prime contract level but also at the subcontract level. Prime contractors can be expected to refuse to participate in any production contract in which they must guarantee performance based on a design which is not their own. Prime contractor's will likewise be forced to limit their selection of subcontractors to those who have either designed components themselves or are willing to guarantee another's design. As more of the guarantee burden falls on prime contractors, it can be expected that they will be forced to perform more work in-house (make), rather than subcontracting (buy), often without competition and at greater cost. The participation of smaller businesses in weapons systems production will be reduced as prime contractors identify those companies unable to demonstrate the financial capacity to stand behind the potential liabilities created by the statutory guarantees.

The costs of weapons systems will increase as contractors necessarily cover their contingent liabilities through appropriate price increases.

If the weapons systems contractors or the subsystem or component manufacturers are unable to establish sufficient reserves through price increases to offset the contingent liabilities (which must be disclosed in their IR financial statements to comply with Generally Accepted Accounting Principles (GAAP) [1]), the ability of de-

[1] Statement of Accounting Standards No. 5, ¶8 & ¶23.

fense contractors to obtain debt and equity financing at a reasonable cost will be impaired and expansion of the competitive defense industrial base will be adversely affected.

In summary, the law, although well intentioned is unworkable unless the Department of Defense exercises its waiver authority routinely. The subject of guarantees is too complex for a vague and simplistic statement of law such as Section 794. We urge that the Section be repealed and the performance guarantee issue be reconsidered. DOD can and has contracted for appropriate warranties in the past and can be expected to continue to do so in the future. We are convinced that Congress need not dictate guarantee provisions. We believe that DOD is in the best position to recognize the necessities and complexities of utilizing warranties or performance guarantees when viewed from a defense perspective. Financial and operational risks must be considered jointly and warranties used only where appropriate and cost effective.

That concludes my prepared statement and I am now ready to answer any questions you may have.

Attachment.

[From the Federal Register, Friday, Jan. 20, 1984]

DEPARTMENT OF DEFENSE—OFFICE OF THE SECRETARY

DRAFT GUIDANCE ON WRITTEN GUARANTEES

Agency: Office of the Secretary, DOD.

Action: Notice.

Summary: By this notice, the Department of Defense seeks written comments on proposed guidance to implement section 794 of the Department of Defense Appropriations Act, 1984 (Pub. L. 98-212), which provides that no funds may be obligated or expended for the procurement of a weapon system unless the contractors for such system provide certain written guarantees to the United States. The proposed guidance provides specific direction to heads of DOD Components with respect to DOD policy and procedures, developed as a result of Section 794, for requiring and obtaining such guarantees at the weapon system or Component level or both in connection with the procurement of weapon systems by the Department of defense.

Dates: Written comments must be received by February 12, 1984.

Address: Office of the Deputy Under Secretary of Defense for Research and Engineering (Acquisition Management). The Pentagon, Room 2A330, Washington, D.C. 20301.

For further information contact: Mr. Ron Pulmer, (202) 695-4235.

Supplementary information: Development of guidance to meet the statutory requirements of section 794 has required revision of, or tradeoffs between a number of fundamental procurement policies. Our practice of applying warranties when appropriate in competitive firm fixed price type contracts has been modified by the statutory requirement to include guarantees in all procurements that qualify regardless of whether competitive or not and regardless of contract type. Section 794 requires acquisition of guarantees for weapon systems which reverses long standing DOD policy of using warranties selectively at the subsystem and Component level rather than the systems level.

Implementation of section 794, a copy of which is reproduced below, is anticipated to require increased surveillance and enforcement of guarantee provisions by contract administration facilities both within the government and within industry. Since there will be significant assumption of risk by defense prime contractors as a result of this statute, in all probability, greater risks will have to be shared by subcontractors and vendors.

SEC. 794. (a) Except as otherwise provided in this section, none of the funds appropriated by this or any other Act may be obligated or expended for the procurement of a weapon system unless the prime contractor or other contractors for such system provides the United States with written guarantees—

(1) that the system and each component thereof were designed and manufactured so as to conform to the Government's performance requirements as specifically delineated (A) in the production contract, or (B) in any other agreement relating to the production of such system entered into by the United States and the contractor;

(2) that the system and each component thereof, at the time they are provided to the United States, are free from all defects (in materials and workmanship) which would cause the system to fail to conform to the Government's perform-

ance requirements as specifically delineated (A) in the production contract, or (B) in any other agreement relating to the production of such system entered into by the United States and the contractor; and

(3) that, in the event of a failure of the weapon system or a component to meet the conditions specified in clauses (1) and (2)—

(A) the contractor will bear the cost of all work promptly to repair or replace such parts as are necessary to achieve the required performance requirements; or

(B) if the contractor fails to repair or replace such parts promptly, as determined by the Secretary of Defense, the contractor will pay the costs incurred by the United States in procuring such parts from another source.

(b) A written guarantee provided pursuant to subsection (a) shall not apply in the case of any weapon system or component thereof which has been furnished by the Government to a contractor.

(c) The Secretary of Defense may waive the requirements of subsection (a) in the case of weapon system if the Secretary—

(1) determines that the waiver is necessary in the interest of the national defense or would not be cost-effective; and

(2) notifies the Committees on Armed Services and Appropriations of the Senate and the House of Representatives in writing of his intention to waive such requirements with respect to such weapon system and includes in the notice an explanation of the reasons for the waiver.

(d) The requirements for written guarantees provided in subsection (a) hereof shall apply only to contracts which are awarded after the date of enactment of this Act and shall not cover combat damage.

POLICY GUIDANCE

Section 794 of the Department of Defense Appropriations Act, 1984 requires that written guarantees be obtained in connection with the procurement of weapon systems. This guidance is issued to provide for implementation of section 794. It sets forth the policy and procedures for requiring and obtaining such guarantees at the weapon system and/or component.

1. Definitions

For purposes of this guidance:

(a) "Weapon System" is equipment which, without substantial modification, is or can be used to directly by armed forces to carry out combat missions. By way of illustration, the term includes bombers, fighter aircraft, attack helicopters, combat naval vessels, strategic and tactical missiles, tanks, combat vehicles, small arms, torpedoes, bombs and artillery. The term includes software, ordnance, related support equipment, such as ground handling equipment, training devices, test equipment, and their accessories.

(b) A "component" is an assembly or any combination of parts, subassemblies, and assemblies mounted together in manufacture, assembly, maintenance, or rebuild. Spare parts, per se, are not deemed components unless otherwise fitting this definition.

(c) A "procurement" is a direct contract between the government and a contractor for the production of a weapon system and/or components thereof, irrespective of contract type.

(d) A "specified performance requirement" is any specifically delineated mandatory performance requirement set forth anywhere in a government production contract for a weapon system or in any other agreement relating to the production of such system incorporated or referenced in such contract.

(e) "Conform" means designed and manufactured so as to meet or achieve, or both, the government's specified performance requirement.

(f) "Bear the cost of" means at no increase in contract price irrespective of contract type. The written guarantees set forth in a contract award for the production of a weapon system shall be a separately priced firm fixed price line item.

(g) "At no cost to the government" means that the costs will not be reimbursed the contractor directly or indirectly under the production contract for the weapon system or any other government contract (except for the firm fixed price guarantee line item).

2. This guidance applies only to contract awards made after March 14, 1984.

For purposes of this guidance:

(a) A modification to a contract to add additional quantities constitutes a contract award.

(b) The exercise of a priced production option even when no further definition or negotiation of terms is required constitutes a contract award.

(c) The notice to proceed with quantities after the first year quantity in a multi-year procurement does not constitute a contract award.

(d) The placement of an order under a basic agreement or basic ordering agreement constitutes a contract award.

(e) The definitization of an existing redeterminable contract does not constitute a new award.

(f) The definitization of a letter contract constitutes a contract award.

3. Except to the extent otherwise provided herein, all government contracts for the production of a weapon system or components thereof shall contain a clause:

(a) Guaranteeing that the weapon system and each component thereof were designed and manufactured so as to conform to the government's specified performance requirements and that, at the time of delivery to the government, the weapon system and each component thereof are free from such defects in materials and workmanship as would cause the system to fail to conform to the government's specified performance requirements delineated in the contract.

(b) Guaranteeing that the contractor will bear the cost of all work promptly to repair or replace such parts as are necessary to achieve the required performance requirements and providing that if the contractor fails to repair or replace parts promptly as required by the contract, the contractor will reimburse the government for any cost incurred by the government in procuring such parts from another source.

4. A model clause that may be used for this purpose in contracts for less complex weapon systems is attached. For complex systems, when different types of requirements (see paragraph 5) are present, special guarantee clauses may be written.

5. The written guarantees called for herein pertaining to design and manufacture so as to conform to the government's specified performance requirements will generally be of either or both of two types:

(a) When the specified performance requirement(s) is a test or demonstration and the requirement(s) is deemed to be satisfied upon the satisfactory completion of the specified test or demonstration, for example, of a first prototype or production unit, the guarantee shall provide that, in the event of a failure of a weapon system or component to complete satisfactorily the specified test or demonstration, the contractor shall perform promptly all design and manufacture work as necessary to conform to the government's specified performance requirements at no increase in contract price and at no cost to the government and to complete satisfactorily the specified test or demonstration at no increase in contract price.

(b) When the specified performance requirement(s) consists of the operation of the system without designated failures for a specified period or interval the guarantee shall, at a minimum, provide that, in the event of a failure of a weapon system or component thereof within the stipulated period to meet the designated performance requirement(s), the contractor shall promptly, at no increase in contract price and at no cost to the government, perform all work to (1) design and manufacture the system and each component thereof so as to conform to the government's specified performance requirements as specifically delineated and/or (2) repair and/or replace such parts as necessary, to meet the designated performance requirement at no increase in contract price and at no cost to the government.

6. In contracts for weapon systems, however, there are two types of guarantees: One for performance to insure conformity of design and manufacture to specifically delineated performance requirements (as set forth above); and, one for freedom from all defects in materials and workmanship which would cause the system not to achieve the specified performance requirements. The latter is a separate and distinct guarantee provision which would attach to all delivered end items under the weapon system contract for a specified period of time. These guarantees are not mutually exclusive and both will be contained within a single contract for a weapon system or components thereof.

7. Consistent with the policy stated in DAR 1-324, the contract may provide such additional warranty protection and remedies thereof as may be deemed appropriate by the government in the circumstances.

8. The duration of the written guarantee shall be tailored, as appropriate, to the specific contract award. The duration of the written guarantee(s) within any given contract award need not be the same for all specified performance reqirements.

9. Payment for the written guarantee shall be made on a pro-rata basis at time of delivery of the contract end items covered by the guarantee.

10. During negotiation of a proposed contract, care must be taken to identify firm and/or prescribed performance requirements that have been included in the specifi-

cations and other relevant documents in order to avoid later dispute. These performance requirements should be reviewed to assure that they are realistic and achievable and that the performance requirements specified in the contract accurately reflect the needs for the weapon system. Unless otherwise indicated by the government, all specified performance reqirements fall under the performance guarantee(s). If it should be determined that a written guarantee at the weapon system level is not cost-effective or otherwise not in the interest of the national defense, the identification and examination of appropriate components of the weapon system for applicability of a written guarantee(s) is also required. This examination should include a review of individual performance parameters (such as durability) for application of a written guarantee if comprehensive coverage is determined to be infeasible.

11. During negotiation of the contract, each circumstance(s) that could have the effect of voiding the guarantee should be identified and specifically delineated in the contract. For example, if the guarantee would be voided, in whole or in part, by the subsequent incorporation of spare parts that were not predetermined to be a duplicate of the replaced part, this should be the subject of negotiation. Contracting officers should not agree that any circumstance(s) will void the guarantee unless the relationship between the circumstance(s) and the performance requirements is direct and the circumstance(s) identified as voiding the warranty is beyond the control of and not attributable to any fault of the contractor.

12. The firm fixed price of the guarantee(s) should be identified separately. In order to facilitate the identification of the cost of the guarantee, it shall be set forth in the contract as a separate line item.

(a) In determining whether use of a guarantee is cost effective to the government, the benefits to be derived from the guarantee must be related to the costs of the guarantee to the government. Guarantee costs arise from the contractor's charge for accepting the deferred liability created by the guarantee and from the government's administration and enforcement of the guarantee. In most cases, contractors will quote a higher price to provide the guarantee. Competition will be a major factor in the price quoted by the contractor to the government for the guarantee. In addition, the experience of the contractor in producing the item is another major factor in the cost of the guarantee since it may rely on an actuarial basis to assess financial risk. As a further consideration, the estimated cost to the government for correction or replacement by the contractor, by another source, or by the government, in the absence of a guarantee, should be compared to the guarantee costs considered above.

(b) There are other factors which must be considered in determining whether the guarantee is cost effective such as any indirect costs to the Government necessary to maintain the guarantee in effect. For example, if certain spare parts must be purchased only from designated supplies in order to keep the guarantee in effect, the estimate of the loss to the government attributable to this limitation on competition should be estimated. By way of a second example, the effect on breakout and competitive procurement of weapon system components should be considered.

13. The wavier authority granted in Subsection 794(c) is hereby delegated to the Secretaries of the Army, Navy, and Air Force and to the Directors of Defense Agencies with authority to redelegate not below the level of the Vice or Assistant Commander of a Major Command or the Assistant Directors of a Defense Agency. Class waivers for specific programs may be granted, when justified. Class waivers may not be approved below the level of the Assistant Secretary of the Military Department or the Directors of a Defense Agency. A written record will be kept of each waiver granted, together with supporting documentation, to meet the reporting requirements to the Congress. A waiver of the guarantee requirements in whole or in part set forth above must be:

(a) Supported by a written determination that the waiver is necessary in the interest of the national defense or would not be cost-effective.

(b) An intention to waiver such requirements must be forwarded to the committees on Armed Services and Appropriations of the Senate and the House of Representatives in writing, including in the notice an explanation of the reasons for the waivers(s).

(c) Notification of all class waivers will be sent to the DOD Acquisition Executive.

14. This guidance is effective immediately.

GUARANTEE

(a) Notwithstanding inspection and acceptance by the government of supplies furnishes under this contract or any provision of this contract concerning the conclusiveness thereof, the contractor guarantees:

(1) That line item ——— and each component thereof are designed and manufactured so as to conform to the performance requirements of this contract and all other supplementary agreements relating to the production under this contract of line item ——— entered into by the United States and the contractor, and

(2) That line item ——— and each component thereof, at the time of delivery, are free from all defects in materials and workmanship which would cause the line item to fail to conform to the performance requirements of this contract and all other supplementary agreements relating to the production under this contract of line item ——— entered into by the United States and the contractor; provided, however, that with respect to government-furnished property the contractor's guarantee shall extend only to its proper installation so as not to degrade its performance and/or reliability, unless the contractor performs some modifications or other work on such property, in which case the contractor's warranty shall extend to such modification or other work.

(b) In the event of a failure of line item ——— to meet the conditions specified in subparagraphs (a)(1) or (a)(2) above:

(1) The contractor will promptly repair or replace such parts as are necessary to achieve the required performance requirements and the contractor shall bear all costs in connection therewith, or

(2) If the contractor fails to repair or replace such parts promptly, as determined by the contracting officer, the contractor will pay the costs incurred by the government in procuring such parts for another source and in accomplishing the repair.

(c) The contractor will also prepare and furnish to the government data and reports applicable to any correction required under this clause (including revision and updating of all affected data called for under this contract) at no increase in contract price or cost to the government.

(d) When items covered under the guarantee are returned to the contractor, in pursuance to this clause, the contractor will bear the transportation cost from the place of delivery specified in the contract (irrespective of the f.o.b. point or point of acceptance) to the contractor's plant and return.

(e) If the government determines that it does not require repair or replacement of defective or nonconforming supplies, the government shall be entitled to an equitable adjustment in the price of such supplies.

(f) The contractor shall be notified in writing of any failure of line item ——— or any conponent thereof subject to the guarantee set forth in paragraph (a) above within ——— days after discovery of the failure. Upon election by the government of a remedy in accordance with paragraph (b) or (c) above, the contractor will, notwithstanding any disagreement regarding the guarantee, comply with such direction. In the event it is later determined that the failure was not subject to the guarantee set forth in paragraph (a) above, the contract price will be equitably adjusted.

(g) The guarantee provisions of this clause do not apply to combat damage.

(h) For purposes of this clause, the term "performance requirements" means only those performance characteristics that are mandatory. The term "performance requirements" does not include performance characteristics that are described as goals or objectives.

(i) The rights and remedies of the Government provided in this clause are in addition to, and do not limit, any rights the government may have under any other clause of the contract. Disputes arising under this clause will be resolved in accordance with the clause of this contract entitled Disputes.

Dated: January 17, 1984.

M. S. HEALY,
OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 84-1628 Filed 1-19-64; 8:48 am]—Billing Code 3601-01-M

Chairman TOWER. Thank you very much.
Mr. Blumenstein?

STATEMENT OF JACK BLUMENSTEIN, VICE PRESIDENT AND DIRECTOR OF PUBLIC RELATIONS, ROLM CORP., REPRESENTING AMERICAN ELECTRONICS ASSOCIATION

Mr. BLUMENSTEIN. Mr. Chairman and members of the committee, my name is Jack Blumenstein. I am vice president of Rolm Corp.

I am responsible for a variety of company concerns including corporate policy planning, particularly as it impacts product development in the markets in which we compete.

I am pleased to appear today on behalf of the American Electronics Association which represents over 2,400 member companies nationwide in all segments of the electronics industry.

Our members range in size from high tech startups to the largest in the industry. Seventy-two percent of our members are small companies employing fewer than 200 people. In the aggregate our membership, including these many small companies, account for 63 percent of worldwide U.S. electronics sales.

I speak to you today from the viewpoint of a manufacturer who sells commercial products off the shelf to the Government whose products are typically used as components or subsystems and whose defense sales are typically relatively small in relation to overall sales.

Finally, I speak to you in support of the proposed repeal of section 794 guarantee.

Rolm Corp. is an example of the kind of company I am talking about. We manufacture and sell off-the-shelf military specification computers for use in guidance and fire control for weapon systems including the cruise missile project.

We sell those same computers for commercial use in oil exploration, forest products, nuclear power products and other environmentally hazardous products.

In our recently completed year military sales were important to us, but a relatively small part of overall sales of our company.

This is a difficult issue we are dealing with. There is a natural reaction to think that warranties are good and the stronger, the better. I think all of us are here to say that this is not the case in this circumstance.

I want to emphasize that we are not talking about product quality. We stand by our products and their reliability. We take pride in what we offer to the marketplace and to the Department of Defense and we are perfectly willing to offer to defense the same warranty we provide our commercial customers. We do so where appropriate and when the Defense Department deems it desirable from a cost-effectiveness standpoint.

To the extent that the avowed intent of section 794 is to bring commercial protections to weapon systems procurement, we think that section 794 does not do this. It is not a typical commercial warranty.

It is unreasonable in its scope and, in fact, would have the effect of increasing procurement cost significantly with no compensating benefit in product improvement and with an accompanying decrease in technological innovation.

To illustrate that difference, in a commercial warranty the manufacturer guarantees the product is what it is represented to be and will perform in a given fashion. That warranty is reasonably limited in time, scope of coverage and the type of damages for which risk is assumed.

The warranty is typically given in an environment where the technology is proven and established and the manufacturer has control of design and production, fully understands the intended

use of the product and controls the service and maintenance function.

All of these factors are inapplicable totally to the weapon system procurement area and to the language of section 794.

The guarantee in 794 itself is unlimited in time, scope and potential damages. We are operating in an environment in which our products typically are part of a system designed and inspected by the Government and in which the specifications are constantly changing over the life of the project development. Its use is often uncertain and in the commercial environment is often untested.

Many times the purpose of the system is to be ahead of the technological leading edge and the manufacturer at the component and subsystem level has no power over the alterations of his product, the service and maintenance function or control of the manufacturing process in many cases.

In short, section 794 asks for guarantees from the small manufacturer of components and subsystems based on undefined effect and with responsibility for total system function to specifications which are not known at the time the manufacturer makes this product.

If he can readily see from a small manufacturer's standpoint it is an unacceptable risk to provide a relatively low-cost component or subsystem and to assume liability for full unlimited damage for the system's failure, unless he is compensated for doing so, it must lead to the worst of all possible situations: A dramatic increase in cost coupled with a decrease in the number of competitors available in system bidding functions.

In simple terms, section 794 does not take into account how the electronics industry does business.

The history of product and liability from burn-in phase through delivery is well known and is an important part of critical industries all across this country.

The modular nature of most of the products provided is of a type that is susceptible of pulling out a board and replacing it with another and those replacement boards and parts are available at commercially compatible prices.

In this legislation which is aimed at the issue of overpriced spare parts replacement, it is the classic example of hard facts leading to a bad law.

Section 794 guarantees would also eliminate the Government's ability to take advantage of mechanisms which now exist in the Department of Defense regulations. I know that issue was addressed this morning.

I emphasize those regulations provide important flexibility to utilize such items as incentive contracts, special research and development contracts, flexible cost contracts, all of which are tailored to specific systems and criteria of the Department of Defense and within which the Department of Defense makes the determination whether specific portions of a system or the system itself, should be covered by warranties and to what extent those warranties should apply.

That flexibility is important to maintain, as others have addressed.

For all the reasons I have summarized and are set forth more fully in my testimony, it is particularly important to the small manufacturer that this legislation be given greater consideration and in its present form be repealed.

The simple fact is most of our members will not and cannot continue to bid aggressively to increase the level of products, the number of products available to the Government and to remain in this marketplace if they are asked to accept the risk and exposure inherent in the current legislation.

Thank you.

[The prepared statement of Mr. Blumenstein follows:]

PREPARED STATEMENT OF JACK BLUMENSTEIN, VICE PRESIDENT, ROLM CORP., ON BEHALF OF THE AMERICAN ELECTRONICS ASSOCIATION

Mr. Chairman and distinguished members of the Senate Armed Services Committee, it is my honor to have this opportunity to address you today on behalf of the American Electronics Association regarding Section 794 of the fiscal year 1984 Defense Appropriations Act.

My name is Jack Blumenstein, and my position in Rolm Corporation is that of Vice President, with responsibilities in such areas as corporate policy planning and the allocation of our resources among existing and proposed products.

Rolm Corporation is a domestic manufacturer of computerized PBX equipment and systems and Mil-Spec computers. The Mil-Spec division now accounts for about 15 percent of the company's overall revenue. The division introduced the Ada Work Center, the first fully implemented compiler and development system meeting Department of Defense Specifications. Another new product is the MSE/14 Micro System, a 16-bit processor extension of the Rolm family of Eclipse military computers. It is the highest-performance, low-end military system available today.

I appear before you today on behalf of the American Electronics Association. AEA now represents over 2,400 member companies nationwide. The Association encompasses all segments of the electronics industry, including manufacturers and suppliers of computers and peripherals, semiconductors and other components, telecommunications equipment, defense systems and products, instruments, software, research and office systems. The AEA membership includes companies of all sizes, from start-ups to the largest companies in the industry. But 72 percent are small companies employing fewer than 200 people. Together, AEA member companies account for $140 billion in sales—63 percent of worldwide sales of the U.S. based electronics industry.

AEA believes that Section 794 of the fiscal year 1984 Defense Appropriations Act is ambiguously drafted, goes far beyond the protections provided by comparable "commercial" warranty provisions, and disrupts the existing and balanced warranty policy presently set forth in defense acquisition regulations.

Had Section 794 received sufficient hearings and industry comment before it was enacted last year, I believe its shortcomings could have been avoided. However, after only part of one hearing in the Senate last year, and no hearings in the House, Section 794 was passed. Now, it is incumbent upon all companies whose business could be in any way affected by defense contracting to seek a repeal, or at a minimum, a significant revision of this Statute.

PUBLIC PERCEPTIONS VERSUS COMMERCIAL REALITY

Recent newspaper articles and other expressions of public sentiment toward the warranties provision indicate certain general misconceptions about defense contracting. First, defense contractors are portrayed as a group who are willing to sell anything to the government, whether it works or not, usually at outrageous prices. Second, the Pentagon is seen as either virtually incapable of curbing the abuses of these unscrupulous industrialists, or it is in their same camp (the so-called military-industrial complex), tacitly allowing their abuses to foster unfetted. These perceptions are fed by a number of examples pointing to mismanagement in both industry and the Pentagon.

Given this public sentiment, it is no wonder that Congress saw the need to require defense contractors to guarantee that everything they sell to the government meets government performance specifications. Further, any defects in material or workmanship should be fixed at no cost to the government. After all, companies conduct-

ing business in the normal commercial marketplace frequently guarantee their products, so why can't defense contractors?

In fact, however, there are roughly 43,000 companies with whom the Pentagon directly conducts business. This does not account for the vendors from whom those contractors purchase products, or those vendors' vendors, etc. Yet, the thousands of transactions conducted daily between the Pentagon and American businesses, involving untold jobs and resources in every state in the nation, go unnoticed until a variety of circumstances result in the sale of a $500 hammer to the U.S. Government.

Furthermore, almost all defense contractors are commercial manufacturers; and particularly in the electronic industry, the proportion of Pentagon sales to their overall business is relatively minor. These companies all must survive, therefore, in the highly compeitive commercial marketplace by offering the highest quality product at the lowest possible price. These contractors frequently do guarantee that they will replace or repair defective products or parts at their own expense under certain conditions. Do these same companies immediately turn into Mr. Hyde as soon as they taste a Pentagon contract?

Nevertheless, Section 794 was enacted under two basic assumptions. First, existing law was inadequate to assure proper safeguards against unscrupulous defense contractors. Second, warranties, modeled after the concept of "commercial" warranties, could solve the problem of government purchase of "defective" weapons systems.

DEFENSE ACQUISITION REGULATIONS PERFORMANCE INCENTIVES

Existing defense acquisition regualtions provide sufficient authority for the Pentagon to negotiate contract performance incentives in government contracts. Indeed, most government contracts contain such performance incentives which accomplish the same goals as are intended by Section 794, but without the negative effects of Section 794.

For example, many defense contracts contain minimum performance requirements for contractors to meet in manufacturing certain products. However, a variety of incentives are negotiated into contracts to provide contractors with certain "rewards" for exceeding the minimum requirements.

COMMERCIAL WARRANTIES VERSUS SECTION 794

There are several very important distinctions between manufacturers' warranties of their commercial products and the kind of guarantee which will be required of defense contractors and their subcontractors under Section 794.

It is common knowledge that manufacturers provide only limited warranties against certain defects only under certain situations. This is understandable, since manufacturers do not warrant a product unless they are certain about the performance characteristics of that product. This means that the product has been fully tested in a commercial environment. Even then, the manufacturer limits his liability under the warranty to such circumstances as, for example, "normal wear" on "major components" for "one year" provided the operator does not tamper with the product and returns it to the manufacturer at the operator's expense, etc.

The reasons commercial manufacturers can offer even these limited warranties are that they have control over the design, manufacture, testing, and to a certain extent, operation of their product. Also, importantly, these commercial items are produced in large quantities, providing the manufacturer with sufficient data with which to determine an appropirate warranty.

None of these features is characteristic of defense contracts. The Pentagon often retains control over design, production and testing of weapons systems. Further, once a system is developed, it often is ordered in limited quantities, and the manufacturer has little or no ability to control maintainance or service of the equipment.

SECTION 794 IS AMBIGUOUSLY WRITTEN

Even if defense contracts were somehow "warrantable" by statute, Section 794 is to ambiguously written to provide the means by which industry reasonably could be expected to conduct business.

The first requirement of Section 794 is that manufacturers guarantee that weapons systems and components are designed and manufactued to conform to government performance requirements. Assuming that one determines a reasonable definition of what a "system" or "component" is (no help is provided in the Statute or Legislative History), there are practical problems associated with who is responsible

for what under such a guarantee. Is the prime contractor responsible for every component of the final product he sells to the government? If this is the case, just think of the administrative labyrinth that the prime contractor of the B–1 bomber will face. The B–1 has 19,000 vendors involved in manufacturing it.

The law implies that subcontractors also are responsible for guaranteeing their component products. But if this is the case, these subcontractors frequently are not involved in the design of the components they manufacture, particularly when manufacturing spare parts. Are they reasonably supposed to guarantee the performance of something they did not design? At what cost can this guarantee be written so as to provide the contractor and subcontractor some sort of assurance that they will be in business next year?

The second requirement of Section 794 provides that weapons systems and components are free from defects in material and workmanship. This provision seems to indicate that if at any time any defect appears in any system or component, the "contractor" is held responsible. What about when the contractor incorporates GFE/M (government-furnished equipment/material) into his end product? Does he guarantee the component GFE/M?

Under the Statute, therefore, the term "defect" seems to include parts or components with which the contractor has had no control either in design or manufacture. Further, there is no provision to account for parts or components which are customarily replaced at routine inspections or maintenance. Finally, there is no indication of when the defect can be "discovered" or for how long the warranty against defects should last.

Third, Section 794 provides that the contractor will bear the cost of replacing or reparing any defective parts or components so as to meet overall performance requirements of the weapon system. Obviously, there are reasonable limits to such a requirement which do not appear in the Statute. Does the contractor in Michigan pay for the transportation back to the factory of a tank which went on the blink in Germany because of a defective part? Presumably not, but this example is illustrative of the problems of determining who pays for what when something goes wrong.

In fact, often it is impossible to assign responsibility for what component went wrong in a weapons system. Did an entire weapon system fail because of a relatively minor part failure which caused a chain reaction of failures? How does one determine what went wrong and who should be responsible for "repairing or replacing" the "defect(s)"?

Even more difficult to determine is responsibility in cases where "performance" never is truly tested. This is particularly the case in major weapons systems like transcontinental missiles, which never have flown a polar course, for which they presumably are designed but have never performed. What about electronic countermeasures equipment which has been tested in laboratories but never against actual jamming techniques or products, some of which may not have been known at the time of manufacture? How does one warrant an expendible product like ordnance, missiles, or bombs? The Statute provides no consideration whatsoever of such questions.

SECTION 794 IS IMPRACTICABLE TO ADMINISTER

As a practical matter, there are many different kinds of defense contracts which are in various stages of performance that are affected by Section 794. Because Section 794 is effective immediately (following a 90-day waiver by the former Deputy Secretary of Defense), contracts with options to sell additional products or components as well as letter contracts in effect will now have to be renegotiated. The effect of such renegotiations means that Section 794 would retroactively apply to existing contractual agreements. Thousands of contract options and letter contracts will be involved.

Another practical problem associated with Section 794 involves contracts which contain clauses limiting the contractor's liability in certain circumstances. Does Section 794 supersede these provisions, or vice versa?

Most importantly, however, is the problem of pricing the cost of a warranty. How can a contractor price a warranty clause on a product which has been tested, or even designed, under his control? Further, how can he be sure that all of the parts and components contained in the final delivery item have been adequately designed, tested, and priced to cover warranty costs?

EFFECTS OF SECTION 794

Since the Pentagon will try to deal "only" with its prime contractors under Section 794 requirements (itself an administrative nightmare when adding negotiation,

oversight and administration of thousands of warranty clauses), prime contractors presumably will have to keep track of their subcontractors' warranty procedures, prices, etc. Will they, or even can they do it?

AEA believes that Section 794 will most severely affect its small business members who perform sub- and sub-subcontracting duties for defense contractors. These secondary and tertiary manufacturers have neither the adminstrative, legal, nor financial resources available to them that large prime contractors have in determining costs and effects of the warranty requirements imposed upon them by Section 794. Thus, they will either opt out of defense subcontracting, or will be forced blindly to undertake significant risks.

To minimize risks associated with compliance with Section 794, those companies willing to undertake defense contracts naturally will resort to the most conservative methods and technology available. Thus, technological innovation will be held to a minimum. The effects of such conservatism on both the industrial base in general and on defense preparedness in particular are obvious.

The costs of any defense system surely will increase since contractors will be pricing the cost of assuring against liability.

The time necessary to propose, negotiate, award and deliver any weapons contract will be prolonged indefinitely. Proposals will have to include performance guarantee requirements on systems and subsystems, costing the government time administration, and money. Contract negotiations will be protracted because of these requirements and in an effort to define and limit contractor's liability. The award of contracts could become particularly lengthy in cost type contracts. In those cases, a contractor could charge the government, under the guise of normal production costs, any reasonably predelivery costs associated with bringing his product into conformance with performance requirements. Obviously, here is a natural incentive not to deliver to the government until the contractor can rest reasonably assured, at taxpayer expense, that his product has no defects.

Finally, even if all the aforementioned problems were overcome, there remains the very real prospect of endless litigation to determine who is responsible for what when something goes wrong.

A recent letter written to AEA by Tracor, Inc., and AEA member company from Austin, Texas, summarizes the ramifications of Section 794:

The likely results [of Section 794] are that prices the Government pays for its systems will be higher, contractors will propose conservative designs which provide less than maximum defense capability or they may choose not to provide defense equipment at all.

CONCLUSION

Section 794 is a law which is founded on good intentions. However, the law is derived from misguided perceptions and an incomplete understanding of the unique circumstances surrounding defense contracting.

The electronics industry as well as other industries conducting business with the Pentagon are not interested in making exorbitant profits from defense contracts, contrary to some publicly held beliefs. Indeed, the overwhelming majority of AEA members do not even conduct any defense contracting. Of those members who do, the majority of them are subcontractors whose defense business is only a small portion of their total operations. Thus, we are here today not so much to "protect our turf" as to inform Congress of the pervasive effects that this law will have on any industry or company conducting any business with the Pentagon.

SUMMARY

Almost all defense contractors are also commercial manufacturers who must survive in the competitive marketplace by offering the highest quality product for the lowest possible price. To compete effectively, these companies frequently provide limited warranties on their products.

Commercial manufacturers can offer limited warranties because they maintain control over the design, manufacture, testing, and to a certain extent, operation and maintenance of their product. They also produce warrantied items in large, established quantities, providing the manufacturer sufficient data with which to determine an appropriate warranty.

Section 794 of the FY 1984 Defense Appropriations Act makes an incorrect assumption that "commercial" type warranties can be applied to defense contracts. However, none of the characteristics of commerical warranties applies to defense contracting.

Section 794 is difficult, at best, to interpret and administer effectively.

The likely results of section 794 are that prices the Government pays for its military systems will be higher, contractors will propose conservative designs which provide less than maximum defense capability, or they may choose not to provide defense equipment at all. This latter alternative is especially the case for small or minority-owned subcontractors.

Section 794 is founded on good intentions, but derived from an incomplete knowledge of the unique circumstances surrounding defense contracting. It should be repealed.

Chairman TOWER. Thank you, Mr. Blumenstein.

Mr. Hardman?

STATEMENT OF WILLIAM E. HARDMAN, PRESIDENT AND CHIEF OPERATING OFFICER, NATIONAL TOOLING AND MACHINING ASSOCIATION

Mr. HARDMAN. Mr. Chairman and Senator Goldwater, I purposely prepared a very brief statement which I hope you will find succinct.

Our industry is composed of 13,000 small contract metalworking companies. While our typical member will have 15 to 25 employees, they are perhaps the most highly skilled workers in the country.

Our journeyman tool makers, precision machinists, and die makers can take a blueprint supplied by DOD or a prime contractor and produce a part to the most exacting specifications.

They use state-of-the-art equipment ranging from the simplest lathe to the most complex numerically controlled machining center. They can produce the desired part to within 1/10,000 of an inch in tolerance and surface finishes in millionths of an inch when necessary.

These highly competitive, efficient companies could reduce the $13,000 billion annual cost of spare parts procurement by nearly half if the Department of Defense would only allow them to submit a bid. This is not our conclusion, but the conclusion of the Small Business Administration and the General Accounting Office based on the results of experiments where a large sample of spare parts were switched from sole source to open competition.

Under current procurement practices, with only 10 percent of the spare parts procured through open competition, it is therefore understandable why most of our members who make parts for the Government do so as subcontractors.

We are here to discuss our dismay with section 794 of the Defense Appropriations Act for 1984. This section requires:

The prime contractor provide the United States with a written guarantee—that the system was designed, manufactured, and equipped so as to conform to the Government's performance requirements and that the system, at the time it is provided to the United States, is free from all defects—which would cause the system to fail to conform to the Government's requirements.

This section calls for the prime contractor "to bear the cost of all work—necessary to achieve the required performance requirements."

What concerns us is that our people who are subcontractors are hearing from prime contractors who are asking that they provide similar performance guarantees.

This action is unfair and will greatly increase the Government's total procurement costs while simultaneously forcing small- and

medium-sized companies to cease to do business with the Federal Government.

The result will be a defense industrial base which will be even more concentrated than it is now resulting in greater risk and vulnerability to the country in times of crisis.

Many prime contractors and subcontractors will opt to withdraw from the market because they are unwilling to assume the risk of warranties, or because they cannot afford or cannot get insurance to cover their possible exposure. Efforts to reduce defense costs by procuring more parts through open competition will be completely thwarted.

The fairness question is easily explained. There are two determinants of whether a given system operates properly.

First, it must be engineered properly. If not properly engineered, it will fail sooner than expected even if all parts conform 100 percent to the design requirements. Our members did not do the engineering in most every case where they are producing a part directly or indirectly for the Department of Defense.

It is reasonable and correct to require that the parts meet the design specifications.

It is unreasonable to demand that our members or any other subcontractor be required to provide a guarantee for engineering or design services which they had no control over.

There is another distinction between the engineering of a system and the production of parts for that system. You can determine whether a specific part meets design specifications by existing scientific techniques of sampling, testing, and measuring.

The more critical the part, the more sampling, testing, and measuring, up to 100 percent of the parts, is necessary. At that point you have a 100-percent assurance that all parts meet the specifications because the Government or prime contractor can and should reject any that are not.

With a 100-percent assurance that the part is free of all defects, warranties are redundant.

Not so with engineering. While you can simulate the likely performance, you can never know how the system will perform due to the possibility of additional unknown factors until you build and test the system.

Many of our members have indicated that they will not warrant the design of parts they did not engineer, nor will they accept responsibility for the consequences of the incorrect design.

Vendors, realizing that there cannot be a 100-percent assurance that a required level of warranted service can be met prior to production, will have to make allowances in their bids for possible costs of warranty service.

Many small prime contractors and subcontractors will withdraw from the market because they cannot get or cannot afford insurance to protect them from potential liability.

Those remaining in the market will pass those expensive insurance costs on to the Government in the form of higher prices. They will likely increase the frequency of sampling, measuring, and testing to further assure that their risk is minimized.

While this may add marginally to system reliability, product testing is very expensive. Although product testing costs are also

legitimate production costs, these costs, too, may raise prices out of proportion to their contribution to product performance.

The net result is that there is a great likelihood that section 794 while designed to save the Government money, may actually end up costing the Government money.

The best solution would be to repeal section 794 of the 1984 appropriation bill. As a practical matter, it is virtually impossible in many circumstances to establish with certainty whether the failure of a part is caused by poor engineering design or by the failure of a part to conform to design specifications.

An alternative solution would be to prohibit prime contractors from passing on responsibility for performance standards to subcontractors. This would be more fair inasmuch as our members only rarely have any input into the engineering of a system.

It is reasonable and correct to ask subcontractors to guarantee that their parts are manufactured to specifications, but then, of course, all concerned would still face the difficult question of whether a specific system failed because of design or material defects.

It would be far easier to leave to the discretion of the Government and/or prime contractors as to how much sampling, testing, and measuring is necessary to provide confidence that the accepted parts are free from defects.

Having done so, you would have isolated the problem to one factor—the engineering—and the Government can have a 100-percent assurance of where the problem lies.

More importantly, you will still be able to reduce costs by using more competitive methods of procurement without risking a loss of an important part of our defense industrial base.

Thank you.

I will be happy to answer any questions you might have.

Chairman TOWER. Thank you, Mr. Hardman.

Gentlemen, there is a rather widespread concern among the Members of Congress that we seem to be buying some weapons that do not meet all the operational requirements.

How would you recommend we solve that problem short of warranty legislation?

Let us start on my right and let each one of you comment.

Mr. BURT. I think the way to solve that problem is to differentiate between design and workmanship and latent defects.

The way to do that, I believe, is to test the system under controlled circumstances where that is possible in that we know how the system is being used, we know how it is being maintained and if it meets operational requirements.

Then I believe a distinction should be made between whether the problems that were found come from design defects or from quality problems with the manufacturing.

I believe it is fair and certainly FMC would stand behind and fix any quality problem that came up. If the problem is a design problem, then it should be for the Government to account, since they are the people who approved the design.

I will point out this is not a new procedure. It is a procedure we are currently following on our LTP-7 Marine Corps assault vehicle

rebuilt problem. It is a type of mechanism that is already available to the Defense Department.

Chairman TOWER. Mr. Lincicome?

Mr. LINCICOME. That is a difficult question. The question is: How can we reduce the number of problems we have in weapon systems that do get fielded?

There is a complex tradeoff there between applying the latest state of the art as compared to the enemy threat. Of course, if you supply less than state-of-the-art devices, you can be more sure of fielding a device that works to your original intent.

As testing can slow development, frequently testing programs are shortened in light of the perceived, if not real, urgencies. Concurrency between state-of-the-art testing and production, being driven by the perception of the threat, and the need to field a particular system with the latest capability versus the enemy system are all factors.

So, I think the ability to field, more assuredly, a greater number of systems that work to meet requirements is a complex tradeoff of all those factors. There are things that can be done in terms of quality programs, the things that Mr. Burt mentioned, but certainly the great effect will be in these tradeoffs between state-of-the-art testing programs and the concurrency of production.

Chairman TOWER. Mr. Smith?

Mr. SMITH. I will speak only for the electronics area since that is the only area I can speak to with full knowledge.

I think that Dr. DeLauer mentioned this morning the Willoughby report which said, in a nutshell, spend more money in the early phase, in the design phase, that first year, fund the programs better in that area, and that in itself will do a great deal to improve performance.

Now, I would like to give you a specific example of something we at Westinghouse have already done. This has to do with designing radars that will actually reduce the cost and improve the reliability and performance at the same time.

This was made possible by using more digital techniques, which is a reflection of the technology, but more importantly, the use of modular designs.

I can't stress too much the importance of using modular avionics. I think, fortunately, the trend is in that direction so I am saying something that I think is already well in progress.

By using modules, whether you are building a radar, made up of five modules, or whether we are building computers that use modules in complete weapons systems involving lots of electronics, by going to a modular fashion, you don't have to redesign and reinvent; you get the benefit of your experience, you can keep it up to date with technology insertion made possible by integrated circuits.

So, within these same modules you can continually update over long periods of time, but for long production runs, you can use the same modules and get the benefit of learning in manufacturing and, perhaps more important, you get the quality that comes about from the learning curve and building the same thing over that you can use in many products.

For example, we use the same module in many DOD programs, in many DOD radar programs. The F-16, improved F-16 radar

which is APC-68, the B-1, and DIVAD program, all use common hardware.

Chairman TOWER. Mr. Blumenstein?

Mr. BLUMENSTEIN. If I may address this particular question from the standpoint of Rolm Corp., the fundamental tenet of our business philosophy is that just the kind of results we are seeking can be achieved and progress made toward this is in the design process where it is possible to incorporate in an existing product the improved operating characteristics and proven performance history.

We think it has been demonstrated time and time again that this type of process will not only decrease cost, but more importantly in defense context will increase the odds that when the system is assembled and the switch is thrown, it will work.

Chairman TOWER. Mr. Hardman?

Mr. HARDMAN. I do not represent major prime contractors, but over the last 2 years I have had almost a continuing dialog with the Defense Department, the Defense Secretary, and Deputy Secretary.

From what I have observed and the feeling that I have as a citizen, I think that a much stricter enforcement of the present rules and regulations when it comes to purchasing and when it comes to design areas would probably be the best cure we could get.

It just seems to me that the human equation gets into it too often and people who work together on both sides of the fence for too many years are almost afraid to chastise each other.

I think the human part of this is one of the biggest weaknesses.

Chairman TOWER. Thank you, gentlemen.

Senator Thurmond?

Senator THURMOND. Thank you, Mr. Chairman.

Defense spending, as you well know, has become a hot political topic in these years. The debate has been fueled by news stories of cost growth and weapon system failures and overcharging for spare parts.

The cost growth of the M-1 tank, I want that first. There are two factors that increased the cost: Maintenance inflation and design changes to improve the tank's capability.

I am afraid the public has not understood this and it is raising the cost of defense.

People have talked to me about the spare parts cost. If some things like that are published, it indicates that the Defense Department operates that way generally, which is not the case.

It is going to be hard to explain unless something is done along the line the distinguished Senator from North Dakota indicated to have some kind of assurance that the money we put into the defense brings the proper rewards.

Do you think that this provision in the defense bill is too strict and it is not applicable to conflicting situations?

Mr. BURT. I am not sure I would use the word "strict". I would use the words "too open ended" and it requests warranties that in effect are not in accordance with the standard operating procedure between the Defense Department and the various services and the contractors where basically the services are the final arbitrator and decider of the design, which, in my opinion, is appropriate.

Yet we are asked to warranty the performance of the system.

I also think that the legislation as currently written is going to inhibit the types of things that can be appropriately done to reduce defense costs such as second sourcing and breakout of spare parts.

Senator THURMOND. Now, is there some reasonable middle ground that we can adopt without just repealing that provision entirely that would assure the taxpayers that their interests are being taken care of and that defense is getting its money's worth for the money it spends?

I am just wondering are you opposed entirely to that provision that Congess put in last year in the appropriations bill or do you have some alternative that you wish to suggest that is practical and would get results?

Mr. BURT. Let me make two brief comments. I believe the Defense Department already has a lot of options open to suggest good warranties. I think their track record, at least with the FMC, is quite excellent in that regard.

The second thing, in terms of an option, we would have no problem in trying to live with a bill that has the same type of warranties that Senator Andrews gets on his John Deere tractor.

Senator THURMOND. I realize what was said this morning by some of the Defense spokesmen that it is a tremendous administrative procedure if we do not modify this amendment in some way.

On the other hand, there must be some way somehow that the taxpayers can be assured that they are getting their money's worth.

Mr. LINCICOME. I don't know whether the word is too "strict". The language of section 794 is too broad, too open ended and too far reaching. In fact, it has been suggested that it is unworkable.

I believe we could subscribe to the recommendation and the concluding comment of Dr. DeLauer that although section 794, he believes and we believe, should be repealed, he suggested that further administrative regulations could be put into effect to tighten up the process of selecting where warranties are applied and the degree to which they are applied.

I believe that was the essence of his concluding statement. I believe we could subscribe to that which would represent a further tightening and not one where every exception has to be submitted to the Congress for approval, but where a reporting would be made to the Congress at certain intervals on the progress being made.

Mr. SMITH. I would take a completely different view that the whole law is counterproductive and would cause us to spend a lot of money which, when we look back, we would wish we had spent elsewhere.

To try to salvage any part of it and retain the whole principle of the thing would be counterproductive.

You mentioned spare parts and I think there is a thread that in my mind at least couples it to 794. One of the reasons we have some of these horror stories on spare parts is because we have not looked behind the data.

We see, not in all cases, but in several of the cases, and one or two that I am particularly sensitive to, all the costs are in the documentation cost, not in the cost of producing the spare part.

I think that comes about because of this concern to put something down that you kind of pass the liability on to someone else.

You know, we are not going to make a mistake in buying a spare part because we will require so much paperwork to verify it is the right spare part that it might cost us $5,000 for the documentation and then we will deliver one spare part to verify that the document was right and that will look like we paid a lot of money for the spare part.

I think this will work the same way. We will be so concerned with warranties and passing them around between tiers and between contractors and the Government, we will spend much money with no hardware coming out.

Senator THURMOND. Is there a temptation on the part of some contractors to bid on projects in order to take advantage of the waiver, they are reliable on this contract, and he is competing with others?

Naturally, he wants to get the bid, that is his business. That is what he is in business for, to be successful.

Suppose the others who would bid lower and try to use some shoddy products which might get by but would not give the best service. Would having some kind of warranty be helpful in a situation like that?

Mr. SMITH. My response is that we already have adequate provisions for preventing that. They are exercised.

It is the sort of thing that Dr. DeLauer talked about this morning which is already in place. Of course, past performance which General Stansberry mentioned this morning, is a good motivator to keep the contractor delivering a good product.

There are particular cases. Take the F-16 radar. We took a special warranty where we said anything that didn't work you ship it back, and we'll repair it and ship it back out.

The only problem with that is that I am sure the services can't do that because pretty soon we wouldn't have a logistics command if every job was done that way.

So, there are special times when the contractor would be very happy to step up and stand behind his weapon system with some kind of specialty warranty, as we called it in that case, but those things are not without hazard.

Now, in that particular case we broke even. We priced it at a certain amount and were just about able to do the repair at a break-even cost. But that was not continued and the reason it wasn't continued is that there are too many people in too many depots that want to do that work.

Senator THURMOND. I understand my time is up.

Let me say this. The three strongest supporters in the Congress of national defense are Senator Goldwater, Senator Tower, and me.

It makes it a lot easier for us to help have a strong national defense and maintain it if the contractors will do their full part and if they have furnished any equipment that is not sound and does not give good service, that they make good on it.

I think the public is very much concerned about this. I hope you gentlemen are, because I think if this is repealed altogether, there ought to be some modification in some way that might help in some respects to appease the situation that exists among a lot of people.

Chairman TOWER. Senator Goldwater?

Senator GOLDWATER. I want to start by asking Mr. Hardman a question. You are in tooling and machining.

Have you ever been asked by an aircraft manufacturer to get into machining of a part bigger than a nose wheel strut?

Mr. HARDMAN. I represent the industry at large so I am not asked to do anything like that personally. But our industry has a tremendously wide-ranging capability and the answer to your question is some of our members probably have done that.

In fact, I can think of one, World Aerospace Industries in Minneapolis, that may handle parts of that magnitude.

Senator GOLDWATER. Is the engineering for that strut—I just use a strut because it is a rather typical piece of equipment—is it engineered for you by other companies or do you do your own engineering?

Mr. HARDMAN. In connection with Government work, normally designs, prints, specs are supplied by the Defense Department if it is a prime contract. If it is a subcontract, they are normally supplied by the prime.

In domestic work it is quite the opposite. Our industry will do a great deal of design and development work.

Senator GOLDWATER. Do you find that generally the part engineered by other than your machinist is acceptable?

Mr. HARDMAN. At the Government level I really don't know the answer. At the domestic level the answer is no. A good share of the time we help them develop or improve their design.

Senator GOLDWATER. Your companies would have a rather difficult time complying with a warranty that applied to your particular part in the manufacture of an aircraft if you did not have complete control over the engineering and design of the part.

Mr. HARDMAN. That is not exactly so, Senator.

The problem with companies of our size, in our industry, is financing. The thing becomes too expensive when you get into that hand-down warranty situation.

I am sure you understand as well as I do that the universal language of engineering and manufacturing is orthographic projection which everybody in the room knows is blueprints, along with standard specifications and symbols that go with them. That is the language by which engineers and skilled craftsmen speak to each other.

It does not mean a damn what you are handed; if the data is there and the print is there and the specs are there, you are going to manufacture it to those specs. If it is a wrong design, that is tough.

If the customer accepts it and it is his design, that is the way it goes, we would not have difficulty.

Senator GOLDWATER. Thank you.

Now, I believe in the electronics business that what you are required to furnish as a subcontractor is pretty much off the shelf.

Am I right or wrong?

Mr. SMITH. Directly what we are asked to provide is not off the shelf. We provide both off-the-shelf product and modified product.

Frequently in my own case or *Westinghouse's* case many of the things have either significant new parts or may be totally new and

not having been done before. It is not characteristic of my own business.

Senator GOLDWATER. If that is the case, would you proceed on Pentagon-provided specs for the piece of electronics equipment they had in mind or would you be allowed to go ahead with your own company specs as long as the results filled the bill of what the Pentagon is after?

Mr. SMITH. In almost all cases we provide along the specifications determined by the Government, very infrequently our design or modification of the Government specs. Almost always the Government determines specifications.

Senator GOLDWATER. Do you think you would be better off if you furnished your own designed equipment?

Mr. BURT. That is a difficult issue. To develop equipment to counter a threat, and the Government is the only one in a position to really assess that threat and then prescribe the solutions, quite frequently backing up that solution in several pieces, buying one piece from one company and another from another company where they have relatively different capabilities, I think it would be difficult in the mainstream of our business for us to be in that role.

Senator GOLDWATER. Mr. Smith, in the case of radar, aren't you standardized enough to give pretty much service off the shelf?

Mr. SMITH. Even in these standard modules I referred to we use very exotic microware components. We rely heavily on specialized contractors on the west coast, Silicon Valley, to come up with designs that are very intricate and we have to work very closely during the development phase; we don't want to do it ourselves, but we want the subcontractor to be able to do this in a way that will meet all our special reliability and quality requirements.

So, when we get through a development, maybe a 10 lot or so, this subcontractor is in pretty good shape to build these for production. At that time we turn to a second source because we always want two or more sources for these.

So, we are constantly bringing these small subcontractors into the picture and we kind of work hand in glove. We are in their plants constantly.

We have flexibility in our terms and we do flow down any provisions that are put on us such as to mean-time-between failures and what that part has to do so that we can meet our overall reliability. That becomes part of his contract, just what he has to do.

As I say, we lead him by the hand to make the first one and then he comes through and eventually we get another one and hopefully a third one into the act.

Senator GOLDWATER. I have asked these questions because I think it is becoming rather obvious that we are going to have to do some operative work on this amendment.

I estimate some 8.5 million pieces of paper will be submitted before we get everybody happy. We have too darn much paper running around this town now.

I asked the question because I do have a very strong feeling that many, many companies, I would say most of them, don't have any trouble at all, particularly those companies you gentlemen represent.

I have been in the electronic end a long time and I have yet to see American companies default very often.

When we get ready to change the required language, I just want to see if we cannot incorporate something to the effect that not every subcontractor might have to have a warranty or guarantee. We should explore that further.

That is all I have, Mr. Chairman.

Chairman TOWER. I have only one final question and that is: Would you all agree that there is a striking difference between a warranty on workmanship and material and a warranty on performance?

I think it is important that we make that dichotomy. I think that has been obscured during part of the discussion today on the efficacy of having warranties in military equipment.

Mr. BURT. I would agree absolutely.

I further say that we have no problem in giving warranties on our workmanship and our quality.

We have a lot of problem giving warranties on the performance of the system where we do not have control over the design.

Mr. LINCICOME. I agree with Mr. Burt.

Mr. SMITH. I agree and I believe we have provisions already in place in DOD to accomplish that.

Mr. BLUMENSTEIN. I would agree and further note that the kind of warranty on material and workmanship you are talking about brings out a great number of our members to compete intensively to make that product at better prices and bringing in the broad warranty that brings on system risk and performance risk has the opposite effect of driving away competitors and suppliers.

Mr. HARDMAN. I agree completely. I might observe that the procurement process in the Defense Department of the United States may well be the most complex process that exists anywhere in the American Government.

I think to attempt to tamper with it, and that is all that this is, is tampering, and is probably the case where somebody's heart is in the right place, but he does not have the right information, and I think it is very, very shortsighted to do it.

Chairman TOWER. Gentlemen, thank you very much for your appearance. You have made a very valuable contribution to our record today.

Thank you.

The next witnesses will be Mr. Ohlson, Mr. Roberts, and Mr. O'Hara.

Our next panel consists of three representatives of the Aerospace Industries Association, Mr. Franz Ohlson, vice president of procurement and finance; the second witness is Frank Roberts, senior vice president, Garrett Turbine Engine Co., the Garrett Corp; and the third witness is John O'Hara, director of contracts of Boeing Co.

Gentlemen, we would like to welcome you this afternoon. Thank you for coming.

We will start with our first witness, Mr. Ohlson.

May I say at the outset that you may submit any statements you have for the record and they will be incorporated in the record and any supporting material you want to submit for the record and you may summarize if you choose.

You may proceed any way you see fit.
First we will hear from Mr. Ohlson.

STATEMENT OF FRANZ OHLSON, VICE PRESIDENT OF PROCUREMENT AND FINANCE, AEROSPACE INDUSTRIES ASSOCIATION

Mr. OHLSON. In accordance with the Chair's wishes, I will present my statement for the record.

By way of summary, I am Franz Ohlson, vice president of procurement and finance of the Aerospace Industries Association.

The Aerospace Industries Association of America, Inc., [AIA], is the trade association representing the Nation's major manufacturers of aerospace products, aircraft, aircraft engines, spacecraft, satellites, and missiles, as well as the powerplants and components thereof.

AIA's member companies are involved as prime contractors or subcontractors in virtually all of the weapon systems manufactured for the Government.

It is important that there be no misunderstanding of the attitude of the aerospace industry toward warranties. Aerospace defense contractors do not oppose warranties which are appropriately fashioned and cost effective.

In fact, we have happily lived with the warranty provisions contained in the defense acquisition regulation [DAR] and its predecessor, the armed services procurement regulation [ASPR].

The warranty requirements set out in these regulations, including policy and implementing guidelines, have been incorporated in countless of our contracts with the Government, reflect years of procurement experience—and have served both the Government and industry well.

However, for reasons I will now discuss, AIA strongly urges repeal of section 794 of the 1984 DOD Appropriations Act which mandates that DOD obtain written guarantees in connection with the procurement of weapons systems.

Simply stated, we believe that section 794 is unworkable, cost ineffective and unnecessary in view of existing warranty provisions.

Section 794 is an attempt to apply commercial warranty practices to Government procurement of weapon systems. While well intentioned, this effort fails to fully take into account the special circumstances and restrictions inherent in military production.

The fundamental purpose of a commercial warranty is to limit the sellers' or manufacturers' obligations. Obviously, this is not the intent of section 794.

Commercial warranties are generally based on the manufacturer's control over the design, production volume, and commercial market pricing of a product.

Warranties are also based upon stable designs, with the design development phase largely completed before the initiation of volume production.

Additionally, the manufacturer will have in his possession, prior to volume production, historical operational statistics which will enable him to make reasonably accurate risk and cost estimates.

Also, commercial warranties generally require servicing and repairs, including the furnishing of replacement parts, by the manufacturer or an authorized agent.

Therefore, if a contractor is to guarantee product performance with any degree of certainty, it is absolutely necessary that he exercise design control.

The foregoing factors are not present in DOD's weapon system acquisition process, and for this reason. The defense needs of our country are, and should be, determined by the Congress and the Department of Defense.

Any attempt to transfer such responsibility to industry would be improper. It is unlikely that either Congress or DOD intends or would permit such a shift of responsibility.

It would be appropriate at this time to point out that the producer of a weapon system and/or its components, and the developer of the system, are not always one and the same.

While section 794 does authorize waiver of the guarantee requirement in the event that such a guarantee would not be cost effective, there remains the difficulty of determining what the actual cost will be.

Without design control, estimating cost with any degree of certainty is an impossibility. Accordingly, contractors will at best have to estimate the cost, and a prudent businessman would be obliged to err on the high side.

Thus, the requirement for written guarantees of performance as set out in section 794 will inevitably increase defense costs, and with questionable benefits.

Obviously, one of the objectives of section 794 is to reduce or eliminate performance uncertainties in weapons systems. This runs counter to DOD's weapon system acquisition process which is structured precisely to permit decisionmaking in the face of technical uncertainty.

The Government recognizes this by acceptance of a major share of the risk of such uncertainty through cost type contracting, self-insuring, et cetera. Section 794 would shift this risk to the contractor; such a reversal will be difficult to price, and again, will inevitably lead to increased costs to the Government.

Imposition of such guarantees will also require contractors to extend development and testing time and will inhibit innovative approaches to performance. In addition, the increased administrative burdens, longer subcontract and contract negotiations, disputes and litigation that can be expected to flow from section 794's requirements will also render a nonproductive increase in costs.

The most significant impact of section 794 will be felt by the lower tier subcontractors and suppliers, many of whom are small and small, disadvantaged businesses. Obviously, a prime contractor must pass along the requirements and costs of the guarantee, with the end result that a supplier of a low cost but critical part will assume a multimillion-dollar risk. Some, of course, will accept such risks either through lack of understanding, lack of conscience, or sheer desperation. Others will probably refuse, as prudent businessmen, to accept such risks and withdraw from the defense market, thus negating many congressional initiatives to assist small business.

An inevitable result of the law will be a significant reduction in the number of approved sources for spare parts and repair services. This will defeat current congressional, DOD, and industry initiatives to increase breakout and competition, reduce cost, and increase participation of small and small, disadvantaged businesses in Government procurement.

Such a reduction in competition will also accelerate the erosion of the industrial mobilization base, due to the unwillingness of financial inability of many firms to accept or discharge performance guarantees.

Therefore, the guarantee required by section 794, namely, that "* * * each component thereof was designed and manufactured so as to conform to the Government's performance requirements* * *" cannot be accepted in good faith by a manufacturer of commercial products.

Most commercial products have been designed and/or manufactured prior to the Government's statement of its performance requirements.

To conclude, although section 794 was well intentioned, the real world consequences may instead lead to a degradation of performance and timeliness in the delivery of weapon systems; impose additional administrative burdens; fail to be cost effective; and be counterproductive to other ongoing and contemplated acquisition initiatives to enhance competition, reduce costs, increase efficiency and stability, facilitate breakout and encourage small and small, disadvantaged business to participate in Government procurement.

Accordingly, we respectfully recommend that section 794 be repealed.

Thank you for this opportunity to express our views. I would be glad to attempt to answer any questions you might have.

Chairman TOWER. Thank you, Mr. Ohlson.

STATEMENT OF FRANK ROBERTS, SENIOR VICE PRESIDENT, GARRETT CORP.

Mr. ROBERTS. Mr. Chairman and members of the committee, I appreciate the opportunity to be here today on behalf of the Garrett Corp., one of the signal companies, to give you our views on warranties and specifically section 794 of the 1984 Defense Appropriations Act.

I will try to avoid, where possible, being redundant with Mr. Ohlson's opening remarks, but I must state that the Garrett Corp. has been committed to quality reliability and support of its products, regardless of the user, for approximately 40 years.

The Garrett Corp. supplies military and commercial propulsion engines and subsystems, industrial gas turbines and subsystems as well as high technology components for automobiles and tractors.

We are familiar with warranties throughout a broad business spectrum. Interestingly, the warranty on a tractor is similar to the warranties on a commercial aircraft engine. It consists of material and workmanship, conformance to a specification or data sheet or a specific time period and/or operating hours. This is the same as many military warranty provisions.

In addition to supplying the auxiliary power system for the F-15, F-18, and the B-1 bomber with their associated warranties, the Garrett Turbine Engine Co. has two commercial aircraft engines warranted in effect with the Government.

One is with the U.S. Coast Guard on the HU-25A rescue and patrol aircraft and the other with the U.S. Air Force on the operational services aircraft soon to be in service.

There are many provisions that can affect warranty and warranty responsibility, two of the major ones are design control and time.

In the case of a commercial program the control of the design resides with the supplier of the product, whereas with the military the design control resides with the user.

Warranty responsibility must reside with the controller of the design. All commercial warranties are time limited either with regard to calendar time and/or operating hours of the system. If there were no time limit with regard to warranty, the supplier would have to assume a worst case position for estimating warranty exposure and price accordingly.

The flow down provision advocated within section 794 is extremely counterproductive, both for the small businessman and for competition. These small businessmen have no control and very little knowledge of the weapon system performances for which they are supplying products and, therefore, to ask them to supply an unlimited warranty would drive them out of the business or prevent them from entering the business, which, in effect, would reduce competition and affect national preparedness.

In summary, there is no need for section 794. It is redundant to existing regulations. It will not provide solutions, but will inhibit the current flexibility to provide warranties as necessary, reduce the competitive environment; hurt small business; increase cost to the Government; inhibit the Government's design authority and stifle the research and development required to enhance the national defense.

I, therefore, sincerely urge that you repeal section 794.

Thank you very much.

Chairman TOWER. Thank you, Mr. Roberts.

Mr. O'Hara?

STATEMENT OF JOHN O'HARA, DIRECTOR OF CONTRACTS, BOEING CO.

Mr. O'HARA. My name is John O'Hara, director of contract policy for the Boeing Co.

I have prepared and have submitted to the committee staff a statement which I would like to summarize.

Chairman TOWER. We will incorporate that statement in full in the record. You may summarize it.

Mr. O'HARA. The statement is unusually long. It is 15 pages. One reason for that is that it covers the same ground that was covered in a statement that I provided as the only industry witness who testified at the hearings on September 13 held by the Defense Subcommittee of the Appropriations Committee of the Senate.

So, I felt that it would be appropriate to cover many of those same points from the vantage point of hindsight after the fact for the benefit of this committee as I had tried to do earlier.

The conclusions that are set forth in this statement are the same as the conclusions that were presented to the Appropriations Committee.

I am also going to be appearing under several hats, one of them I am going to put on right now and that is the hat of myself.

I have had 30 years plus of experience in contracting, both commercial and defense contracting, most of it in the airplane business.

In that 30 years of experience I have been familiar with many changes in law and regulation that have occurred during that period of time.

I do not recall any provision of law or regulation that involved such basic policy conflicts as we are faced with in section 794. So, purely on the basis of that experience and purely as a private citizen, I should like to suggest to this committee that 794 presents to Congress, and I think it presents to the Defense Department and it presents to those of us who are doing business with the Defense Department, with contraditions in principle.

This legislation directs the executive branch on how to perform its job and it directs them in detail. It really does fit that accolation of micromanagement. I guess micromanagement is used as an unpopular, even an invidious, term because it means that somebody is managing something that is probably beyond his reach.

The job of getting to know enough, getting enough information to be able to make the kind of rules that section 794 now immediately imposes on the vast field of defense contracting is quite an undertaking.

I am going to say one more thing under my previous hat, that is myself.

I heard Senator Andrews today, but not for the first time. I have heard him say essentially the same thing in the previous hearings back in September, express a very, very sincere opinion that the process by which acquisition is performed is really what he is dissatisfied with because it doesn't produce the kind of results that are expected from the kind of expenditures that are made in the defense business and in defense contracts.

That is a very, very serious problem and I don't think anybody here today that I have heard expressing views about dissatisfaction with section 794 is attempting to sweep any of that under the rug.

I would suggest that the situation we have here is somewhat like the case of somebody who would decide that he wants to make basic systemic changes in the way in which we provide Federal farm subsidies for corn, let us say.

So, he decided the way to go about it is to say that no Federal farm subsidy money may be given to farmers unless they plant a single strain of corn because someone has found that that does extremely well in a certain environment. Farmers would scoff at that.

They would ridicule a simplistic notion of that kind because people who don't understand farming wouldn't realize perhaps that you have to adapt all aspects of farming, seeds, fertilizers, irriga-

tion, crop rotation, to a particular environment and to the soil, the weather and to the uncertainties of nature or else you are going to go broke.

I don't think they would stand for such a law as that, no matter how sincere or desirable the overall objective of systemic reform of the system might be.

Now, back to my Boeing hat. The Boeing Co. issued last week a public position statement on section 794. We did it because we wanted to emphasize our willingness to provide appropriate warranty coverage for all our products, military and nonmilitary alike, and also because Boeing products have necessarily been used as a standard of comparison to illustrate the objective of section 794, the same kind of good results in the commercial world that we are not getting as regularly in the defense world.

But we believe that the real issue is not whether weapon systems and components should be warranted, but whether the defense acquisition process can and should be fundamentally and immediately changed to conform to the commercial practices which are the model and the inspiration for section 794.

Here is where we seek to try to make that point clear to all concerned including the taxpayers.

Boeing is strongly in favor of warranties. In fact, the company's record in providing and administering warranties for its commercial jets is unsurpassed.

New legislation such as section 794 that subjects military products to more demanding standards than now exist in the commercial marketplace involves questions of far-reaching impact.

Such legislation raises issues of whether the Government can conform to across-the-board commercial practices in its defense procurements and whether the adoption of such practices for all procurement would further the national interest.

For example, on commercial practices the contractor controls design development and testing. In weapon system development the DOD controls these areas because it sets the requirement.

Parenthetically who else should set the requirements. Section 794 also raises questions of conflict between the requirement of the legislation and other national goals such as the strategy of maintaining technological superiority, encouragement of small business participation, expansion of competition, and control of defense costs.

Prior to the enactment of section 794 of the 1984 Defense appropriations bill, the Department of Defense had the authority under laws and then existing regulations to require comprehensive warranties in all instances where it would be in the national interest and all of Boeing's present military contracts contain various forms of warranty.

Boeing recommends that legislation imposing warranties upon DOD contracts be deferred until the full implications can be thoroughly aired and all facets considered.

Now, our aircraft warranties apply to advanced technological equipment. The airplane is made up of hundreds of advanced technological products. So, it is entirely appropriate that the Boeing experience has been used as proof that warranties are suitable for this kind of equipment.

But these are commercial warranties and they exist in and have evolved from a commercial environment, but as an across-the-board requirement for weapons systems in a far different environment, we contend they are far from suitable.

I want to make a point particularly clear because of Senator Levin's effort to deal with the problem of warranty and guarantee.

In the 25-year history of commercial jet airplane sales the Boeing Co. has not provided performance guarantees covering our airplanes. The warranties that we and our competitors provide for commercial jet airplanes actually fall short of meeting the requirements of section 794, and incidentally, as has been pointed out, so do the tractor and automobile warranties and others that are cited as examples.

Let me make that point a little more certain about what we mean by performance guarantees. If you read the specifications for a model airplane, you will find a section in the model specifically entitled "Performance Guarantees".

What that does is guarantees the various types of airplane flight and other performance characteristics that are specifically guaranteed to the manufacturer as being the output of the development and testing process.

When the airplane is delivered, it is delivered with a certificate that says the airplane has been built in accordance with the designs that were the designs used in that testing and prototype development process which was completed prior to the delivery of the aircraft to the end customer.

The guarantee ends there. There is test flying, but the test flying is mainly to familiarize the crew with the characteristrics of the airplane.

The performance guarantee on that airplane has been satisfied by that testing and proving out process that takes place before the airplane gets into the hands of the end customer.

We are not unusual in that regard because most manufacturers of complex technical equipment cannot guarantee the performance of that equipment when it is out of their control.

The reason is that the means of evaluating that performance are dreadfully expensive. You have to go through instrumented test programs. You have to go through very carefully controlled conditions in order to be able to determine whether or not you have an actual performance guarantee.

Occasionally it has happened that an airplane will raise a problem with respect to some particular aspect of performance that is extremely important to the value that they can obtain from the airplane in use. We will have a special provision in that case that they can challenge whether or not that airplane in their service has met those performance guarantees.

But if they raise that challenge and we then retest the airplane through an instrumented and controlled flight test condition to determine who is right about that and it turns out that we are right, the airline pays the cost of that retesting.

Now, that kind of provision would be outside the scope of 794. So we have something here in 794 which is completely new.

In my statement I have tried to show in an argumentation which covers the last five pages of the statement the applicability of com-

mercial airplane warranty practices to defense procurement, and we have reached the following conclusion of which I will undertake to read several paragraphs:

The evolution among the Defense agencies of policies and practices of self-reliance, self-determination, and self-insurance with respect to weapon system requirements, the design of defense products and the logistical support of those products in the field, has produced a weapon system acquisition process and Government-operated maintenance, support and operational usages fully adapted to the Government contracting environment.

As such, these processes and agencies who employ them are understandably and of necessity deeply resistant to changes which would contemplate any significant shifting of authority, responsibility, or reliance from the Defense agencies to private contractors.

This is not said in condemnation or criticism of that resistance, but rather as an acknowledgement that deeply-established and longstanding institutional and political relationships exist within Government and between the Government agencies and the private firms which contract with them.

Accordingly, it is our view that the new guarantee legislation requiring the fundamental change of performance guarantees in each procurement of weapon systems or components, cannot, in itself, produce corresponding fundamental changes in policies and practices of Government agencies in determining requirements and controlling performance and design characteristics of defense products.

For weapon systems and their key components, such as propulsion and avionics equipment, the Defense Department clearly intends to continue to control design, development and testing of new products intended for defense and combat use.

As a result, there is a basic and irreversible flaw in the underlying premise for the guarantee amendment. At a minimum the failure of the legislative history of the amendment to address the severe disruptions, incongruities and anomalies arising from the legislation should be seen as a sound reason for deferring application to ongoing programs, and pursuing, with the necessary depth of review and evaluation, a full and open inquiry, with participation by all concerned parties, of the suitability of mandatory guarantee legislation for defense procurement.

Having heard now the statement that Dr. DeLauer made at the conclusion of the question period where he accepted an offer to go back and get some ideas from DOD as to what they think would be workable, I think that process ought to be open to all concerned and not just held within DOD and the committees.

Thank you, sir.

[The prepared statement of Mr. John A. O'Hara follows:]

PREPARED STATEMENT OF JOHN A. O'HARA, DIRECTOR OF CONTRACT POLICY, THE BOEING CO.

I appreciate the opportunity afforded by the Committee to come here today to offer information and views with respect to the Committee's interest in the impact of the Guarantee Amendment (Section 794) of the 1984 Defense Appropriations Act. I am Director of Contract Policy for The Boeing Company and am located in the Corporate Headquarters in Seattle, Washington.

Boeing asserts emphatically its willingness to provide appropriate warranty coverage for all its products—military and non-military alike. We believe the real issue is not whether weapons systems and components should be guaranteed, but whether the defense acquisition process can and should be fundamentally and immediately changed to conform to the commercial practices which are the model and inspiration for Section 794.

To make our position known to those directly concerned, including the taxpayers, and at the same time to help provide a perspective for evaluation of Section 794, The Boeing Company last week released the following public statement:

"BOEING POSITION ON WEAPON SYSTEM WARRANTIES

"Boeing is strongly in favor of warranties. In fact, the Company's record in providing and administering warranties for its commercial jets is unsurpassed.

"New legislation, such as Section 794, that subjects military production to more demanding standards than now exist in the commercial marketplace involves questions of far-reaching impact. Such legislation raises issues of whether the government can conform to across-the-board commercial practices in its defense procurements, and whether the adoption of such practices for all procurements would further the national interest. For example, under commercial practices the contractor controls design, development and testing. In weapon systems development the DOD controls these areas, because it sets the requirements. Section 794 also raises questions of conflict between the requirements of the legislation and other national goals, such as the strategy of maintaining technological superiority, encouragement of small business participation, expansion of competition and control of defense costs.

"Prior to the enactment of Section 794 of the FY'84 Defense Appropriations Act bill, DOD had the authority under laws and existing regulations to require comprehensive warranties in all instances where it would be in the national interest, and all of Boeing's present military contracts contain various forms of warranty.

"Boeing recommends that legislation imposing warranties upon DOD contracts be deferred until the full implications can be thoroughly aired and all facets considered."

The Boeing Company has provided and administered warranties under commercial contracts with hundreds of airline customers throughout the world for more than 25 years, a period covering the entire jet transport aircraft era. We also have extensive warranty experience in defense contracts.

It is the intent of this presentation to provide information on the commercial business and technical environments which have evolved to produce the extensive array of product assurance commitments provided to the world's airlines at competitive prices. We will also describe the business and technical environments and warranty converages in our defense products and conclude by offering some observations on the applicability of commercial warranty practices to the procurement of weapon systems and components.

Essentially, therefore, this presentation will provide for the Armed Services Committee the same relevant information, analysis and conclusions as were provided in September to the Appropriations Committee Defense Subcommittee.

Before proceeding further, it is necessary to distinguish between warranties and performance guarantees. They are frequently used as though they were interchangeable terms. In contracts, they are not equivalent terms. These are separate and distinct concepts. To illustrate the differences, I shall use commercial airplane practice.

Performance guarantees relate to the performance characteristics of the aircraft. They are defined in the aircraft model specification. They cover specific kinds of performance such as take-off and landing field length, speed, range, weight, fuel consumption and other flight characteristics. Performance guarantees are fulfilled by certificates based on testing performed during the development stage, prior to commencement of deliveries. Performance guarantees which extend beyond delivery are not provided because sophisticated and very expensive airplane instrumentation and controlled test conditions and procedures are required for performance verification. Also, manufacturers do not guarantee performance of complex technical equipment once the equipment is under control of the purchaser. Exceptions to these practices exist, they are few and very limited.

Warranties, on the other hand, are contractual assurances that each delivered product is free from certain kinds of defects. These assurances become effectivce at the time of delivery of each aircraft, continue in effect for specified periods, provide

remedies for correcting defects, ground rules for administration and limits on liability.

BOEING COMMERCIAL PRODUCT ASSURANCE COVERAGE

Boeing offers extensive warranty coverages in every purchase agreement for a new aircraft. The coverages have improved with each new model. The 757 and 767 warranties exceed in scope and in length of time any previous warranty coverages offered by Boeing. A pro-forma document contains the standard terms and conditions and description of the warranty coverages and is provided to each prospective airline customer. It becomes a contractual document in each purchase agreement.

A typical purchase agreement contains the following warranties:

There is a warranty covering material, workmanship and design defects for all Boeing-designed systems, accessories, equipment and parts.

There is an agreement to reimburse the customer for material and labor cost of warranty correction accomplished by the customer, when approved by Boeing, and at labor hourly rates agreed upon from time to time.

There is a service life policy which provides reduced prices for materials required to correct defects or breakage in primary structural components and other specified components. Boeing's share is pro-rata based on 100% at time of aircraft delivery, decreasing on a straight-line basis to zero at the end of 12 years.

Boeing agrees to use diligent efforts to obtain warranties covering equipment manufactured to supplier's detailed designs, enforceable directly by the customer against the supplier.

Boeing agrees to obtain a warranty and product support plan from the engine manufacturer of the customer's choice, for the benefit of the customer.

Boeing agrees to investigate any problem where the airline customer cannot readily identify the responsible manufacturer. Boeing will determine the cause, responsible party and corrective action.

Boeing agrees to obtain contractual commitments covering the reliability of components, enforceable by airline customer, for about 200 top maintenance significant items designed and manufactured by suppliers other than Boeing. Boeing also provides a similar reliability program for specified high maintenance components designed by Boeing.

NATURE AND EVOLUTION OF COMMERCIAL AIRPLANE WARRANTIES

As the above description of coverages shows, warranties in the commercial airplane industry are coextensive with design and manufacturing responsibility. This means that warranty responsibility flows to the manufacturer who controls the design. This is one of the fundamentals of commercial warranty practice. It represents a natural distribution of cost, liability and profit (or loss) to the most appropriate sources. You experience this when you get separate warranties for tires, batteries, stereos and other equipment components when you buy a new car.

The warranty of design is limited to the state-of-the-art at the time of the design and development of each model. Later discoveries and advancements in technology, materials or designs are improvements and are outside the scope of the original equipment design. Most importantly, design warranties apply only to parts and structure. They do not comprise a performance guaratnee of the airplane itself.

There are hundreds of individual products which make up a commercial airliner, and each product is under the design control of a primarily responsible manuafacturer. The airlines often purchase proprietary components diectly both as original equipment and as spares. This supports the continued and direct involvement of those suppliers in product improvement, customer satisfaction and increased sales. In turn, it stimulates a broader base of investment in productivity and incentivizes growth and development of a competitive base of suppliers to the airlines.

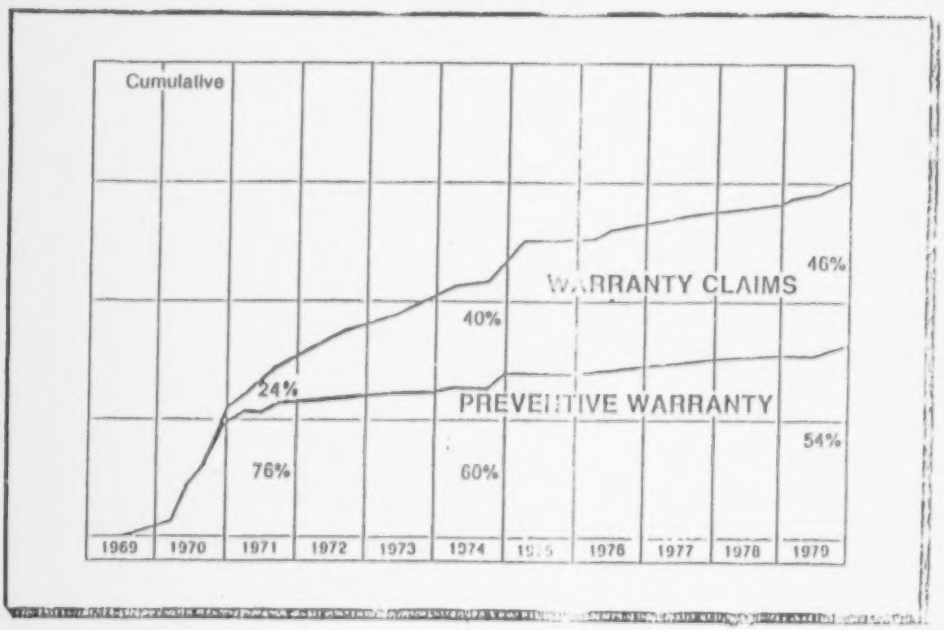
An important characteristic that aircraft industry warranties have in common with the warranties in other industries is that they are limited and exclusive. They define the obligations and liabilities of the manufacturer and the rights, remedies and obligations of the airline customer. This means that the airline customer, in exchange for the manufacturer's warranty undertaking, agrees to limit his claims against the manufacturer exclusively to those warranties expressly set forth in the purchase contract. The airline customer has the obligation to provide reasonable proof that any defect which is the subject of a warranty claim is not the result of normal wear and tear or of any failure on his part to properly maintain and operate the affected aircraft system, accessory, equipment or part in accordance with the prescribed a manuals and technical orders.

Finally, rounding out the description of the commercial warranty environment, there is an industry practice which has grown and developed throughout the years. This is the practice of preventice warranty coverage. While not unique to the commercial aircraft industry, we believe it is more prevalent here than in many other product areas.

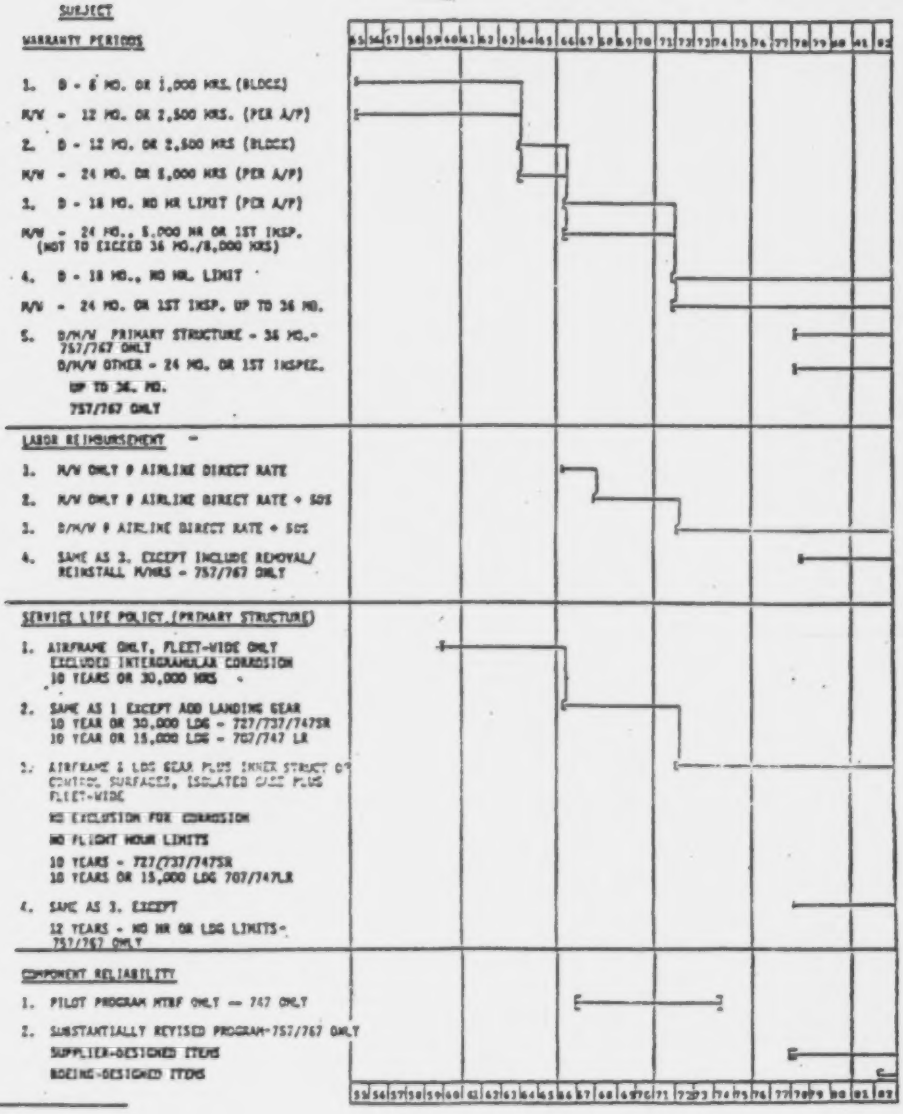
Preventive warranty is a non-contractual business policy. Its objective is to head-off or curtail design defects which could be costly both to the manufacturer in terms of warranty claims and to the airline in terms of increased operating or maintenance cost.

It has been Boeing's experience that over the lifetime of each of our new aircraft models our warranty costs are almost evenly divided between preventive warranty action and warranty claims. This typical experience is shown in graphic form in the first of two charts which are shown on the next succeeding pages. The first of these charts is entitled, "Preventive Warranty and Warranty Claims Costs". It depicts the incidence of preventive warranty and warranty cliam costs over the ten-year period following the introduction of a new model into airline service.

PREVENTIVE WARRANTY & WARRANTY CLAIMS COSTS



HISTORY OF BOEING PRO FORMA WARRANTIES AND RELATED
PRODUCT ASSURANCE CONTRACTUAL COMMITMENTS


SUBJECT
WARRANTY PERIODS
1. B - 6 MO. OR 1,000 HRS. (BLOCK)
R/V - 12 MO. OR 2,500 HRS. (PER A/P)
2. B - 12 MO. OR 2,500 HRS (BLOCK)
R/V - 24 MO. OR 5,000 HRS (PER A/P)
3. B - 18 MO. NO HR LIMIT (PER A/P)
R/V - 24 MO., 5,000 HR OR 1ST INSP. (NOT TO EXCEED 36 MO./8,000 HRS)
4. B - 18 MO., NO HR. LIMIT
R/V - 24 MO. OR 1ST INSP. UP TO 36 MO.
5. B/R/V PRIMARY STRUCTURE - 36 MO.- 757/767 ONLY
B/R/V OTHER - 24 MO. OR 1ST INSPEC. UP TO 36. MO.
757/767 ONLY
LABOR REIMBURSEMENT -
1. R/V ONLY @ AIRLINE DIRECT RATE
2. R/V ONLY @ AIRLINE DIRECT RATE + 50%
3. B/R/V @ AIRLINE DIRECT RATE + 50%
4. SAME AS 3. EXCEPT INCLUDE REMOVAL/ REINSTALL M/HRS - 757/767 ONLY
SERVICE LIFE POLICY (PRIMARY STRUCTURE)
1. AIRFRAME ONLY, FLEET-WIDE ONLY EXCLUDED INTERGRANULAR CORROSION 10 YEARS OR 30,000 HRS
2. SAME AS 1 EXCEPT ADD LANDING GEAR 10 YEAR OR 30,000 LDG - 727/737/747SR 10 YEAR OR 15,000 LDG - 707/747 LR
3. AIRFRAME & LDG GEAR PLUS INNER STRUCT OF CONTROL SURFACES, ISOLATED CASE PLUS FLEET-WIDE
NO EXCLUSION FOR CORROSION
NO FLIGHT HOUR LIMITS
10 YEARS - 727/737/747SR
10 YEARS OR 15,000 LDG 707/747LR
4. SAME AS 3. EXCEPT
12 YEARS - NO HR OR LDG LIMITS - 757/767 ONLY
COMPONENT RELIABILITY
1. PILOT PROGRAM MTBF ONLY — 747 ONLY
2. SUBSTANTIALLY REVISED PROGRAM-757/767 ONLY
SUPPLIER-DESIGNED ITEMS
BOEING-DESIGNED ITEMS
55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82

B = DESIGN
R/V = MATERIAL & WORKMANSHIP

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The second chart is a graphic summary of the 25-plus years of Boeing commercial airplane warranty coverages. It is entitled: "History of Boeing Pro-Forma Warranties and Related Product Assurance Contractual Commitments". This shows the evolution of warranty coverages for the period 1955 through 1982. As the graph indicates, the present extensive warranty coverages of the 757 and 767 airliners have kept pace with the steady and continuous growth in the reliability of the designs, materials, workmanship, processes, and components which go to make up a jet airliner today.

Boeing, the engine manufacturers and the proprietary component suppliers maintain close contact with each new airplane model as it begins airline service and collect extensive information on maintenance and operational experience of the aircraft and its many subsystems. The airlines cooperate fully. The purpose of this surveillance is to learn about and anticipate problems and to make improvements which will help the new model to build a satisfactory service and performance record. In addition, this provides a reliable data base which provides a sound foundation for increased contractual warranty commitments in subsequent products. This is one of the results of the commercial environment, and its freedom, in which the manufacturers and airline customers are motivated by mutual benefit to pursue continuous product improvement. The resulting improvement in warranty coverage is a product of that environment.

DEFENSE CONTRACT WARRANTIES

When Government requirements can be met by a commercially-developed product or a close derivative of such a product, it is usual for the manufacturer to offer standard commercial warranty coverage. Boeing's Government contracting experience includes a number of instances where this has occurred.

AIRBORNE WARNING AND CONTROL SYSTEM (AWACS)

The E-3 or Airborne Warning and Control System (AWACS) utilizes the Boeing commercial 707 airframe as the air vehicle. This system was procured in 1970 by the Air Force following an extended period of competition between Boeing and McDonnell Douglas Corporation, whose competing system was based on the commercial DC-8. Both Boeing and McDonnell Douglas offered to provide their commercial warranty coverages. The Air Force, however, negotiated a price reduction in lieu of the commercial warranty. It was the Contracting Officer's eventual decision that the Government's best interests were served by taking the discount. This did not mean that the Government had no warranties. The contract provided for two standard warranties. These were the Inspection Clause Warranty—freedom from latent defects, fraud or gross mistakes, tantamount to fraud. This is mandatory under the Defense Acquisition Regulations (DAR) for all procurement of supplies under fixed-price contracts (see DAR 7-103.5); and the Correction of Deficiencies Clause Warranty (see DAR 7-105.7(c)). The COD warranty is used extensively in the procurement of major defense systems where the Government imposes design and configuration control and specifies the design and other technical requirements such as special testing or processing of materials or parts. It provides for the contractor to correct failures of the supplies or technical data to conform to contract requirements, without change in the contract price.

OTHER COMMERCIAL AIRPLANE DERIVATIVE PROGRAMS

Boeing had similar experiences in Air Force procurement of the E-4 (Advanced Airborne Command Post), which utilizes the commercial 747 airframe, and the T-43 (Navigation Trainer), which utilizes the 737 airframe.

MILITARY AIRLIFT PROGRAMS

In recent years, several major competitions for airplanes utilizing commercial jet airplane technology and structure have resulted in extensive warranty proposals. In each case, proposed warranty coverages were very similar to commercial airplane warranties. One of these was the C-X competition for a new Air Force airlift transport airplane. The eventual selection in that competition was the McDonnell Douglas C-17. The resulting contract contains warranties which are similar in many respects and more extensive in some respects than the comparable commercial airplane warranties. All three competitors, Boeing, Lockheed and McDonnell Douglas offered similar warranties.

Another case was the effort by Boeing to convince the Air Force to procure the 747 freighter instead of the Lockheed C–5B as a military airlifter. Boeing's proposal provided warranty coverages fully equal to the 747 commercial warranties.

TANKER/UTILITY AIRCRAFT (KC–135)

In another recent case, Boeing and the Air Force negotiated a unique warranty in a contract for re-engining Air Force KC–135 tanker aircraft. It covers Reliability, Maintainability and Mission Effectiveness. Naturally, it is called the R,M and ME Warranty. This is a mixture of Reliability Improvement warranty for the new modified equipment and a limited performance guarantee for the resulting overall KC–135R aircraft. Under this warranty, reliability and maintenance targets for specified equipment items and for the overall modified KC–135 system will be verified during a 3500-hour flight test program involving the first 9 aircraft produced in this program. This R,M and ME warranty is a separately priced testing, correction and product improvement program within the contract. It required complex and extensive engineering effort and pricing negotiations. Failures to meet the contract guarantee levels will require corrective redesign, retest and re-equipment by Boeing. Boeing can earn incentive profit by exceeding the contract guarantees. This same contract also contains a Correction of Deficiencies (COD) Warranty requiring covering defects in materials and workmanship and in the integration and installation of the modifications into the KC–135R aircraft.

AIR LAUNCHED CRUISE MISSILE (ALCM)

In the Air Force's Air Launched Cruise Missile (ALCM) Program, where Boeing was selected as the prime contractor after a lengthy competition and competitive fly-off demonstrations, there is a unique Availability Guarantee which is based upon the results of an annual test firing program. This is a separately priced testing, correction and product improvement program analogous to the KC–135 R,M & ME Warranty. If the test firings do not meet the target availability level because of design or other deficiencies which were Boeing's responsibility under the contract, Boeing then has a redesign and re-equipment responsibility up to predetermined cost levels. Changes estimated to exceed this cost level will require contract amendment and additional funding. This guarantee also has incentive features. If test results exceed the target availability rating, Boeing can earn extra profit.

SUMMARY

With rare exceptions, Boring's defense contracts for production of supplies are fixed-price contracts. They contain the mandatory Inspection Warranty Clause, which was mentioned above. In particular, Boeing's defense contracts for production of major systems (and this constitute the great preponderance of Boeing's defense business) are likewise fixed-price or fixed-price-incentive contracts. All programs now in production involved concurrent development, test and evaluation and production. These all contain a Correction of Deficiencies Warranty Clause, described above, usually with some special tailoring related to the unique circumstances of each system.

The Service Life (Airframe Structural), warranties, engine manufacturer and component manufacturers' warranties, and component relability improvement coverages which have become universal in commercial airline purchase agreements are present in some degree in defense contracts, but not in every case. Most weapon systems do not have the 25-year continuous product line background of our commercial airplanes.

In comparing our Government warranty experience with our commercial warranty experience, the Government warranty coverages, are, in general, less extensive than the commercial warranties; however, some aspects of Government warranties are more extensive than commercial warranties.

The differences in warranty coverage are directly caused by the differnt nature of the products supplied under our defense contracts, the greatly different uses of these products as compared with commercial aircraft, and the absence of a suitable data base of operational and maintenance experience on which to base warranty predictions.

Finally, and most importantly, our Defense Department customers do not grant us freedom of action, nor do they place total reliance upon us, as our airline commercial customers do.

THE APPLICABILITY OF COMMERCIAL AIRPLANE WARRANTY PRACTICES TO DEFENSE PROCUREMENT

In examining the question of the applicability of commercial airplane warranties to defense procurement, it is necessary to recognize the significant and extreme differences in the business and technical requirements and relationships of Government contracting, as compared with commercial practices. Virtually all of these differences would have to be eliminated or greatly reduced in order to achieve a workable and effective result.

What we have found in analyzing commercial airplane warranties would be applicable to almost every other product field. The inescapable conclusion is that commerical warranty practices are infeasible for application across-the-board under the existing requirements of major defense contracting.

COMPLETION OF R&D AND TEST AND EVALUATION BEFORE DELIVERY

Boeing and each of the other major airline producers offer to a large number of individual airlines, large and small throughout the world, a relatively small number of basic aricraft models which have been highly developed and extensively tested and proven before delivery to the airlines. This rarely, if ever, occurs in a major weapon system program. the weapon system acquisition prices is adapted to the governmental environment of annual decisionmaking and uncertainty and to basic changes of directionas new Administrations and world crises come and go. This results in development and testing periods stretched out over decades with continual changes in performance requirements and technological content. In order to get a new weapon system or equipment into the hands of the field commanders and fighting forces, before it becomes obsolete, production is usually required to begin while development, test and evaluation processes are still continuing.

The imposition of total performance guarantees on systems and equipment produced in this environment is insensitive to this prevailing characteristic of defense contracting.

CONTROL OVER DESIGN, DEVELOPMENT, TESTING AND PRODUCTION

The design, development, testing and quality control of commercial airplanes and their equipment, while subject to Federal Aviation Administration (FAA) surveillance, is totally controlled and performed by the responsible manufacturers. Further, as noted previously, each responsible component manufacturer warrants his own products, directly to the end user. This raises several key questions which have received no consideration in the decision to apply commercial warranty practices to defense procurement. First, are the buying agencies willing and prepared to deal with multiple supplier warranties on a single complex and item such as a weapon or combat or transportation system? Second, are the buying agencies willing and prepared to surrender control over the contractor's design, development, testing and production, including selection and use of subcontractors?

PRICING

Another consideration in examining the application of warranties to defense procurement is the effect on pricing. In a commercial market, the price is established by the market place. Warranty cost is a relatively small element in establishing an overall commercial price. The airplane, engine and component manufacturers invest large amounts of money in development and testing, tooling and inventory build-up before making the first delivery, and in product improvement cost throughout the life of the aircraft. The manufacturers attempt to recover this investment and realize a profitable return on it by obtaining a projected share of a world-wide market over a period of many years. The precise year of warranty cost incurrence and the precise amount of warranty cost incurred in each year does not determine whether the manufacturer will be able to recover his cost through eventual sales.

In defense procurement the picture is totally different. The cost of every element at every step in the process, from the beginning of development through the end of a successful production run is significant, and must be given full consideration. By law and regulation there must be total cost visibility and accountability. Each element which contributes to the cost of performing a defense contract must be identified, and must be estimated, proposed, costed and paid in a consistent manner, established in advance. Also, costs must be allocated to contracts in the year when they are incurred. Annual appropriations require that costs be related to specified fiscal year contracts.

Accordingly, the rules which govern defense contracting require an ability to predict costs, not just in amount, but also in the time of occurrence. Warranty costs are not so predictable. A warranty is a form of contingent liability. Defense contract regulations prohibit the inclusion of contingencies in contract cost estimates unless they are specifically identified in amount together with the rationale for their inclusion. For a new defense product, not previously used or operated, this can become an exercise in probability theory. At best, it presents special and unusual pricing and accountability problems, which can become more severe, and more subject to after-the-fact criticism, where the product does not enjoy a suitable product performance data base to permit reasonable and sensible predictability.

The requirement for total performance guarantees defies any approach to pricing that could meet defense contract standards or that would result in pricing based on a reasonable ability to predict risk. No consideration whatsoever has been given to this situation. The new law confronts both DOD and its suppliers with a conflict between the new requirements and the established rules for defense contract pricing.

OPERATIONAL USE AND MAINTENANCE

There can be significant differences in the environment in which commercial and military airplanes are operated. Operating instructions and manuals and rules governing airline flight operations are based on civil aircraft and passenger convenience, comfort and safety. Airline maintenance and repair must be carried out by licensed personnel and are also subject to civil aircraft regulations. Commercial planes are operated only over established route structures at speeds and altitudes controlled by the air traffic system, and, again, based on passenger comfort and safety factors. Military operations and maintenance are not so constrained. The differences in exposure of equipment to extremes of design capability can provide wide variations in product performance and maintenance cost in military operations, as compared to the more stable and predictable airline operations.

OVERALL CONTRACTUAL ENVIRONMENT

In meeting our contractual commitments, including warranty commitments, we and the other commercial airplane producers enjoy virtually complete freedom of action. So long as the aircraft continues to meet the safety requirements of the Federal air regulations and retains its airworthiness certification, Boeing is free to make design changes in order to correct defects, meet maintenance and reliability targets and improve overall product performance, as well as to reduce our production cost and our airline customer's operating cost.

Virtually none of these circumstances apply to defense procurement. Defense agencies determine their own requirements not only for products, but for the performances and other characteristics and contents of those products.

In the case of airplanes, the Defense agencies usually specify the engines and other items of equipment and components which must be used. The Defense agencies maintain many in-house technical laboratories which perform research and development requirements and specifications. The Defense agencies also utilize federally-funded Research and Development Centers to provide technical direction and system engineering throughout development and production of defense products. Manufacturers are not free to deviate from these agency-determined requirements or from the military specifications which are mandatory under regulations and long-established, ingrained practices.

NEGOTIATION AND ADMINISTRATION

The warranty terms of our commercial contracts are generally well known to customers and competitors alike. They are generally standardized in advance of sale and fully set forth in pro-forma documents. They do not require separate pricing. They are administered under standardized business and technical arrangements which have evolved over a long period of time and are well understood and accepted. One result is that in connection with the sale of billions of dollars of commercial airplanes with extensive warranty coverages, Boeing has scarcely any litigation involving airline warranty claims. The experience of our competitors is comparable.

Initially, it may appear plausible and sensible to require that contractors guarantee the performance requirements of weapons systems and components which they produce. However, examination of weapons system acquisition policies and practices would reveal a host of problems in defining and determining the precise obligations of the many Government and private sources who have some part in the eventual

system or component performance. All complex weapons systems and even some apparently simple ones are made up of major subsystems which are called "system segments". Usually each system segment is produced and developed by a different contractor. There are specifications for each segment, as well as for the total system. In turn, and through the process of engineering development, the system segment specification is broken down into a large number of configuration item specifications and drawings which set forth the detailed design of each item which in the system segment. The objective of this process is to assure that the configuration of each item of the segment is rigidly defined, frozen, and capable of being produced in exact replica of a first item which has been subjected to a design and physical configuration audit. The process requires monitoring and approval of each item by the Government representatives and often, the consulting contractors to the Government who provide system engineering and technical direction of weapons systems throughout development and production. The performance of the final weapon system, itself, is a function of how these end items of the subsystems, or segments, operate when they combined with other segments, and their end items, to make up the weapons system.

The simple, inescapable fact of weapons system development and production is that a weapon system produced under this process is not any single contractor's end product. Accordingly, the problems of expressing in contractual form the performance guarantee obligations of each of the numerous contributors to this end product present difficulties of truly great magnitude. It should be obvious beyond question that it also presents a situation with no counterpart in the commercial world.

Further complicating this inherently difficult and complicated situation is the fact that system specifications at both the weapon system and segment levels are created in advance of the development of technologies, designs and criteria which will ultimately determine the make-up of the configuration item specifications, and the detailed components of the eventual end product. As a consequence, the system segment specification is usually stated in terms of objectives, goals, and generalized or open-ended requirments. Very many of these are subjective, because the entire process is geared to provide for Government control and approval throughout the acquisition process.

The tasks involved for every weapon system program and contractor and the buying agencies include as a minimum:

Converting these specifications into a contractual performance guarantee statement;

Providing information and procedures for determining how performance shall be measured and whether performance has been met;

Converting this into information of sufficient precision to permit a reasonable determination of the amount of risk being placed on contractors;

Estimating the costs incident to acceptance and discharging of these risks;

Negotiating an agreement that meets the statutory requirements; and

Determining if the result is cost effective or otherwise harmless to national security.

Performing these necessary tasks will require a total and searching review and restatement of the entire massive array of specifications, documents, drawings, reports, technical data and procedures associated with every weapon system.

If, for reasons of expediency, performance guarantees are imposed on contractors without the requisite time and resources devoted on both sides to the review and restatement of requirements and the careful and precise distinction between objectives, goals, subjective requirements and firm obligations, weapon system contracting will be threatened with an abundance of claims, disputes and litigation. This could add tremendously to cost, absorb and distract key resources and make a negative contribution to the national welfare and defense.

ANNUAL AUTHORIZATION AND APPROPRIATION

Overriding all of these special characteristics of defense contracting is the annual Authorization and Appropriations process, which produces a special set of uncertainties and, characteristically, a considerable amount of instability. This process alone constrains freedom of action and the incentive and even the opportunity to invest in warranty avoidance and product improvement actions. This freedom, incentive and opportunity are fundamental to the creation, acceptance and efficient discharge fundamental to the creation, acceptance and efficient discharge of product responsibility in the commercial airplane business.

CONCLUSION

The evolution among the Defense agencies of policies and practices of self-reliance, self-determination and self-insurance with respect to weapon system requirements, the design of defense products and the logistical support of those products in the field, has produced a weapon system acquisition process and Government-operated maintenance, support and operational usages fully adapted to the Government contracting environment. As such, these processes and agencies who employ them are understandably and of necessity deeply resistant to changes which would contemplate any significant shifting of authority, responsibility or reliance from the Defense agencies to private contractors. This is not said in condemnation or criticism of that resistance, but rather as an acknowledgement that deeply-established and long-standing institutional and political relationships exist within Government and between the Government agencies and the private firms which contract with them.

Accordingly, it is our view that the new guarantee legislation requiring the fundamental change of performance guarantees in each procurement of weapon systems or components, cannot, in itself, produce corresponding fundamental changes in policies and practices of Government agencies in determining requirements and controlling performance and design characteristics of defense products. For weapon systems and their key components, such as propulsion and avionics equipment, the Defense Department clearly intends to continue to control design, development and testing of new products intended for defense and combat use.

As a result, there is a basic and irreversible flaw in the underlying premise for the Guarantee Amendment. At a minimum, the failure of the legislative history of the Amendment to address the severe disruptions, incongruities and anomalies arising from the legislation should be seen as a sound reason for deferring application to ongoing programs, and pursuing, with the necessary depth of review and evaluation, a full and open inquiry, with participation by all concerned parties, of the suitability of mandatory guarantee legislation for defense procurement.

Chairman TOWER. Thank you.

Of course we will be glad to hear from industry any additional suggestions or supporting data that they may have between now and the time we may act on this in the markup of the authorization bill.

Senator Thurmond?

Senator THURMOND. Thank you, Mr. Chairman.

I want to congratulate you gentlemen for coming in and testifying. All the witnesses today I think have been most helpful.

I am just wondering, is it your feeling that this section should be repealed entirely or should it be modified in some way to allow certain items that will not meet the requirements of the section 794 warranties or would it be better just to repeal the whole thing?

A great many people feel there is some merit in this section and it should not be repealed entirely.

Mr. OHLSON. Speaking for AIA, sir, I would suggest strongly that the entire section be repealed. We have said, and I think you have heard other witnesses say today, we believe that there are already provisions in the procurement regulations to fully satisfy Government's needs to get equipment that is workable, and so forth.

I would give some serious consideration to looking at the maintenance of the equipment. As Mr. O'Hara said, once a commercial airplane leaves the hands of the manufacturer, it is put in skilled maintenance hands for a good long period of time.

Yet this committee knows better than any other committee perhaps the turnover within the military that causes the maintenance of the equipment to be turned over to new men regularly. I think your existing regulations on workmanship and material are certainly adequate.

General Stansberry testified, and so did the admiral, that there are specially tailored performance guarantees that are negotiated to suit the particular procurement. I think that is one of the difficulties you will have with any legislation that you seek to draw.

If it is going to be that broad, it is going to have to be as broad as to direct the Department of Defense to negotiate suitable performance guarantees whenever you need to meet the requirements of a particular procurement.

I don't think legislation is needed for that purpose.

Senator THURMOND. In your opinion, does the Government get as good guarantees on what it purchases as a commercial company would get, for instance?

Mr. OHLSON. I am afraid I don't understand the question.

Senator THURMOND. Suppose the Government bought an airplane from a company that manufactures planes and suppose that same company manufactures planes for commercial airlines which some do, would the Government get as good a guarantee of performance as a commercial airline gets?

Mr. OHLSON. I am not familiar with that, but from meeting the people in the business, I would say the Government gets the same warranty that the commercial purchaser gets.

I think Mr. O'Hara can better answer that question.

Mr. O'HARA. A partial answer to your question, Senator, is in the statement that I have handed up at pages 7 and 8 where I talk about the recent competition for military airlift which ended up with the selection of McDonnell Douglas Corp. as the developer of the C–17, the aircraft which one day may replace the C–5B as the principal military airlift.

In that competition which was concluded more than 2 years ago there were warranties provided which all three of the competing manufacturers, McDonnell Douglas, Boeing, and Lockheed, covered every aspect of the modern commercial jet warranties and in fact went beyond that in some instances.

So, there was in that procurement as complete a coverage as any commercial airline would have. That process required at least a year of very intense engineering work and definition and a great deal of negotiation to get to that point in the procurement. It was not inexpensive at all.

Under existing law, as I have said, the Department of Defense not only has but uses very effectively and professionally the competitive leverage and buying leverage that it has to obtain warranties where it deems it to be appropriate.

Senator THURMOND. Would you say that applies to most of the items that the Defense Department purchases or is that just certain big items like airplanes?

Mr. ROBERTS. With regard to engines and subsystems of aircraft that we supply, the answer is yes.

The commercial warranties and military warranties, as they are negotiated with the various military agencies, are very similar; in some cases the military warranty is even a little better.

Mr. O'HARA. I think it would be very instructive if the committee would obtain from the Defense Department, and I am sure they would cooperate and I know that industry would cooperate in giving you not only a list of the special warranties that apply over

and above the warranties that are required by the defense acquisition regulation that governs material and workmanship and so-called correction of deficiencies warranty, which is also a standard DAR provision, the special warranties that are in existence in all the major programs that are in production.

I think you will be surprised agreeably to find there are special warranty coverages in virtually every one of those.

I would like to add this, if I can quickly.

The warranty coverages for these items turn out to be hybrids. They are joint warranties and performance guarantees and product improvement programs in special areas of performance of that system which is critical to its mission effectiveness or which affects the particular area of the user cost for that system which would be the high maintenance drivers, the things that would cost the most to make that system remain in a high state of readiness and effectiveness.

I couldn't be more proud of the record that the Defense Department and industry jointly have made with respect to the array of warranties and product improvement coverages that have been provided which kind of makes it ironic that this law went into effect with the greatest of intentions, but with apparently not enough investigation and inquiry into what is already in existence.

Senator THURMOND. Thank you.

Chairman TOWER. Senator Nunn?

Senator NUNN. I have no questions.

Chairman TOWER. Senator Levin?

Senator LEVIN. Mr. Chairman, I guess the dilemma we face is how do we increase the quality of our weapon systems without digging ourselves into a lot of deeper holes in reducing competition and reducing the technological edge that we have, increasing cost beyond the benefits.

Those are three possible errors we could make if we misstep here. There are others, I am sure, but at least those three.

Reducing competition by small business particularly not being able to compete as well, we could increase the cost beyond the benefit of the insurance premium, in effect, that somebody would have to pay to give us such a warranty.

It would increase the cost to us more than the benefit that we could achieve.

Chairman TOWER. And add second sourcing to your competition.

Senator LEVIN. Absolutely, and the additional possibility of putting some damper on technological advance.

On the other hand, I think everybody is interested in trying to improve the quality of the weapon systems. That is the dilemma we face.

My own opinion is that this particular section is probably too broad. I indicated that this morning. I think we should try to find a way if we can to fine-tune it to enhance the use of warranties, if there are areas where they are not being used, then they should be.

Let me ask you gentlemen and I am asking you now to put on the fourth hat on the other side of the table and I won't ask you to identify, I won't press you beyond this one question:

Are there areas where you think we should be insisting on performance warranties, performance requirement warranties, where we are not?

That is a terrible question to ask you and I won't ask you the followup question.

Are there any areas where we are not requiring performance requirements warranties, as we call them, or I call them?

Mr. OHLSON. I don't want to touch that one principally because I am not in operations. I have not been engaged in manufacturing airplanes for 20 years.

Senator LEVIN. Mr. Roberts or Mr. O'Hara.

Mr. ROBERTS. Senator, I am going to do something I don't like to do. I am going to try to answer the question different from what you asked.

Senator LEVIN. We do that all the time.

Mr. ROBERTS. At the risk of incurring your wrath, I believe we are looking at a snapshot in time today that says we have had some weapon systems problems that have become very highlighted with regard to the public. That is unfortunate.

I believe over a period of time in the Department of Defense, and I am only speaking in the area of engines and engine subsystems in the aircraft—I can't speak of any other area—that there is in being an evolution of engine acquisition particularly in the area of development, test and evaluation.

At one time I was a project engineer back in the 1960's and we had a contract to develop the T-7F turboprop engine. It was a triservice airplane.

The objective there was to design and develop this turboprop engine from a blank sheet of paper and we did this in something like 14 months.

The philosophy at that point in time was to develop the engine as quickly and as cheaply as possible and pay the price later after it went into production.

Today it is an entirely different approach. Today when you are bidding on an Air Force or Navy engine, you are bidding as one of the major parameters what is the cost of ownership, not only what it is going to cost in the initial phase, during the development phase, during the test evaluation phase, but what is it going to cost when it gets into the service.

Therefore, you have to introduce a long lead maintainability warranty type of life associated with it.

Today we are in the development of the F109 engine for the new generation trainer. They pay more money up front in order to get a better product at the end of the development, so that it costs them less money once they get into operation.

Senator LEVIN. I am not sure that I know what the answer is to my question. Let me ask Mr. O'Hara. Are there areas, and I won't press you on where, where we should be pursuing warranties where we are not?

Mr. O'HARA. The answer is yes, there are areas, in my opinion, and the answer would be mainly in the field of user cost.

I agree entirely with Mr. Roberts.

Senator LEVIN. That is what Mr. Roberts was getting at?

Mr. O'HARA. I believe much more can and should be done in imitation of what is happening in the commercial world to place performance warranties on the element of a system which are the heaviest user, maintenance cost or the heaviest restriction on performance because they affect reliability or readiness of the system.

In other words, what I am suggesting is shooting with rifles and shooting with precision and with a knowledge that I believe can be obtained by the Congress of the real progress that is being made in this field, and earlier today General Stansberry, the Air Force witness, referred to a product performance or product assurance center that has been created by the Air Force System Command in Dayton.

That center has a very impressive array of warranty coverages that they are proving out by use in systems as being the most effective and the most productive in these fields.

A warranty should be approached as an investment. It is going to have some cost and it should have a specific payoff. The payoff should be able to be gauged just like anything else.

If we can take the mystery out of this subject and take the moralism out of this subject and treat it like the business problem that it is, I think we can make some tremendous improvements and headway.

Senator LEVIN. If all three of you gentlemen upon further thought would like to expand and give additional answers to that, perhaps the record will be kept open for that purpose, it would be very helpful to us.

I think I know what both of you are driving at. If you will supplement it, it will be useful.

The next question is this:

Particularly in your testimony, Mr. O'Hara, you indicated there was a lack of flexibility in the statute, for instance, the cost of retesting is sometimes applied to the commercial purchaser by Boeing if the retest proves to meet requirements of the warranty.

Are you saying that this statute is so inflexible that that kind of requirement could not be written into the regulation?

Mr. O'HARA. I don't think it is that inflexible. I think it could be written in the regulation.

I find it hard to believe that the Defense Department could write such a regulation, but it could be written.

Senator LEVIN. The statute would not provide an obstacle?

Mr. O'HARA. The statute would not provide an obstacle.

Senator LEVIN. Is it your understanding that this statute does not apply to spare parts—I am addressing the three of you—but only to components and above?

You may have heard that testimony this morning.

How would you describe your understanding of the applicability?

Mr. OHLSON. I again pass that argument.

Mr. O'HARA. If you want to make a legalistic distinction, you can say perhaps if the statute is applied to an Appropriations Act and deals with production, that maybe it should only apply to production money.

If you buy spare parts out of production money, okay, it can apply. If you ignore that factor and just read the definition or the term "component" and look at the definition of component, you

can't reach any other conclusion except that it would have to apply to spare parts which met the definition of components because the statute does not qualify.

Mr. ROBERTS. I agree that one would have to define what component means. Without that definition, I would have to agree with Mr. O'Hara.

Senator LEVIN. Mr. Chairman, I think that these hearings have been extremely helpful. I will use just a moment of my time to say that I think we have learned a tremendous amount from industry today on this subject, that we are going to have to, I hope, or we should at least, narrow and modify this statute. I think it is too broad.

One of Senator Andrews' purposes, however, as he stated this morning, is to try to bring into our orbit the design skills of private industry. I kept pressing him on that question.

We should make a distinction between performance standards where we do the designing and where industry does the designing.

Is it fair to hold industry accountable where we are the ones that do the designing?

I think he indicated there should be some flexibility in that regard.

One of the purposes in the way he wrote this statute was in a way to force us to utilize industry's expertise more in design. It is kind of an action-forcing mechanism.

Since this is my last question, I am wondering if you can briefly comment on that point, if you heard it or if I have stated it clearly enough, this afternoon.

Mr. O'HARA. The distinction that was being made today between Government doing the design and industry doing the design again is not the real world.

There are many, I forget how many million procurement actions in the Defense Department. So we are talking about a number of universes.

If you look at the major weapon systems process, the process by which the weapon system is developed goes through distinct phases.

It starts out with the conceptual phase and the conceptual phase has systems performance and design requirements which are very broad and very general and there is a great deal of performance requirement and performance objective in there.

The next phase is the validation phase, sometimes in the form of prototyping.

If the system passes through that phase and still gets support from the agencies and from the congressional committees, it may then one day proceed to full-scale development.

At the time of full-scale development prime contractor and subcontractor and supplier teams are then placed under contract to use their expertise, to use the genius of the American industry and best kind of technical brains and resources that we can put together to turn that validated and better described performance specification into a set of what are known in the trade as, the jargon is, configuration item process specifications.

Now, configuration item process specifications are a set of detailed end item designs and drawings which go together to make up the definition of that product.

That is what you build to when you have a production product for a weapon system; you are absolutely rigidly required to build a replica of each of those items that is the output of that system, but you cannot achieve the ability to go ahead in production with something that meets the configuration item product definition specification without having gone through anywhere from two to five reviews which are participated in and controlled by the customer, by the Government, sometimes by the agency you are contracting with, and more often that, in the case of really major weapon systems, also the federally financed research center which acts as systems engineers and technical directors, people like the Aerospace Corp. and Lincoln Labs and people of that sort.

So, the contractor gets a terrific amount of help in doing this job. The end item is not any single person's product.

Now, that system doesn't exist, doesn't have any counterpart in the commercial world. It is a unique world.

If you are talking performance guarantees and say to the contractor, "You give us a written guarantee that the performance of that end item is going to be perfectly provided for through that design process," you are asking us to do something over which we do not have control.

The real question exists as to whether we should.

Mr. ROBERTS. I would like to add just a bit to that.

Let me read the changes clause, or part of it at least, and this is what creates a problem for us with regard to warranties and warranties for the military.

It is DAR 7-103.2, et cetera:

"The Government has the unilateral right to order changes in the drawing, design or specification where the supplies to be furnished are to be specially manufactured for the Government."

Now, that makes it very difficult for a contractor to say, "I will take on a warranty" when that kind of change can take place.

Chairman TOWER. The comment on that is that it is sometimes necessary for the Government to make that unilateral decision because our systems are sized to requirements that are driven by the threat.

If the threat changes, we have to change the system. If the Soviets, for example, come up with something to defend against the system, we want to improve the system's capability to defeat the enemy's capability to defend against it.

So, you would not deny the Department the opportunity to make those unilateral changes that might be dictated.

Mr. ROBERTS. I wholeheartedly support it, Senator. I think it is right, but it is very difficult for us to give a warranty on something we can't control because we don't know the broad picture.

Mr. O'HARA. I am sure you mean performance warranty.

Mr. ROBERTS. Yes.

Mr. O'HARA. We constantly warrant in our contracts under the correction of deficiencies clause that we will comply with all these specifications. The Government's quality control system is based on that.

Chairman TOWER. Senator Nunn?

Senator NUNN. I don't have any questions. I just want to thank all our witnesses for being here and enlightening us.

Chairman TOWER. Senator Levin, do you have additional questions?

Senator LEVIN. One other point.

Senator Andrews really feels strongly that we want greater control in effect by the private sector over the design and repeated that a couple of times and that this is an action-forcing mechanism in a sense to turn over some of that supervision and control of the design to the private sectors so that they would be in a position to give us more performance warranty.

That goes to the heart of the issue, whether or not we want to or don't want to.

My own inclination is to be leery of it, too. I think we have to be responsible for the design of that kind of equipment. It is different from an automobile or refrigerator.

On the other hand, we ought to look for ways that we can increase the use of warranties where that will produce greater accountability provided we don't make a significant diminution in the responsibility that we must bear in Government for these weapon systems.

That last exchange with you gentlemen, it seems to me, is the heart of the matter and where you philosophically differ with Senator Andrews.

I think he would agree as long as we control design, it may be unfair and impractical and too costly to require warranties for material that we design, but his point is, by God, we don't do that very well here in the Pentagon, let us let private industry do more of the designing.

That is his point and I think it goes to the core of the philosphical difference.

Mr. O'HARA. If I may comment, Senator, I agree fully that we are talking about the very heart of this systemic change that Senator Andrews has in mind.

I have to say now under my third of the four hats, that is me personally, that it is with somewhat of a heavy heart that I so heavily defend the need to object to performance warranties by using as an argument the amount of Government control.

I think that it is a fit subject for debate and study what the proper balance is between the degree of Government control and the extent to which private industry can and should be allowed and enabled to go ahead and in those circumstances to take more responsibility for the performance of the end product.

How you get there in the complex world of weapon systems is something that has to be approached with, I think, great care.

Chairman TOWER. Gentlemen, we want to thank you for very comprehensive and thoughtful testimony. It has been a great contribution to the record we are trying to build on this issue.

We will hold the record open for a few days. If there are additional thoughts that occur to you that you would like to submit to us in writing, we will be delighted to have them.

Thank you again.

Mr. O'HARA. Thank you, sir.

Chairman TOWER. The prepared statement of the Machinery & Allied Products Institute, Washington, DC, and the prepared statement of the Shipbuilders Council of America as submitted by M. Lee Rice the president of the council will be made a part of the hearing record.

[The prepared statements follows:]

MACHINERY & ALLIED PRODUCTS INSTITUTE,
Washington, DC, February 27, 1984.

Hon. JOHN G. TOWER,
Chairman, Armed Services Committee,
U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: In connection with the Committee's public hearing scheduled for February 28 on the new statutory warranty requirements for defense contracts, we present herewith the views of the Machinery and Allied Products Institute (MAPI) and respectfully request that this statement be entered in the formal record of the hearing.

MAPI represents the capital goods and allied product industries of the United States. Although most of the companies in these industries are oriented toward commercial rather than government sales, these companies rely heavily upon continuing technical development and product excellence, and many of them are indispensible to the government's requirements, especially in the national defense area. Hence, we have a particular interest in government contracts and in any policy, such as that implicit in the statutory warrant requirement, which might adversely affect contractors, their relationship with the government, and, indeed, the public interest.

The warrant requirement, which is the subject matter of the hearing, is contained in Section 794 of the Fiscal Year 1984 Defense Appropriation Act (Public Law 98–212) which provides that no funds may be obligated or expended for the procurement of a weapon system unless the contractors for such system provide specified written guarantees as to the system and each component thereof. The guarantees are to cover the following with respect to the system and each component thereof:

1. That they were designed and manufactured so as to conform to the government's performance requirements as specifically delineated in the contract or other agreement.

2. That, at the time provided to the United States, they are free from all defects in materials and workmanship which would cause the system to fail to conform to the government's performance requirements.

3. That, in the event of a failure to meet these above conditions, the contractor will bear the cost of all work promptly to repair or replace such parts as are necessary to achieve the required performance requirements, or, if this is not done promptly, the contractor will pay the costs incurred in procuring such parts from another source.

We believe that the statutory warranty requirement is unworkable, and we urge its repeal. On the fundamental point of the statute's unworkability, we are in accord with what we understand to be the Department of Defense's (DOD's) position as indicated in the Administration's Fiscal Year 1985 Budget.[1] The reasons for our recommendation follow at this point.

PERFORMANCE REQUIREMENTS AND CONTRACTOR INCENTIVES

We are aware, of course, that the proponents of the statutory warranty requirement claim that it will certainly result in improved quality of contractor performance with respect to major weapon systems. It is alleged that the requirement will serve to prevent the furnishing of defective weapon systems and equipment to the military services. In our view, this argument is completely without merit. Up to the present time, DOD has been able to make effective use of its existing warranty policies, embodied in the Defense Acquisition Regulation (DAR) 1-324, and the Inspection and Correction of Deficiencies clauses currently used. Moreover, the proponents of the requirement overlook the existence of current contractor incentives—including the various incentive pricing arrangements—that provide contractors with strong motivation to deliver quality equipment, in conformance with contract specifications, and within the time schedules provided in the contract.

[1] Budget of the United States Government, FY 1985—Appendix, page I-G73.

Of considerably more importance, however, is the strong likelihood that mandatory written guarantees as to performance requirements will inevitably result in the degradation of those requirements. Specifically, if the contractor must guarantee that it will attain the performance requirements specified on the contract, that contractor will insist that those requirements be within the scope of what it is reasonably likely to achieve. Any greater performance requirements which would entail a significant technological advance on the part of the contractor, will, of necessity, have to be refused because, under the statutory warranty requirement, failure of attainment will now include a substantial financial risk not heretofore present.

In addition, it seems equally inevitable that the compulsion to guarantee performance requirements will lead to stretch outs in contract time schedules. In essence, the contractor, again because of the financial penalties involved, will want to take the time to be absolutely sure that the equipment is without a defect when it is delivered to the government.

In summary, the mandatory performance requirement guarantees will both degrade product technology, in terms of technical advance, and stretch out contract time schedules—both to the detriment of the national defense effort.

THE DESIGN PROBLEM

Under the statutory requirement, the contractor must guarantee that the system and components thereof were manufactured so as to conform to the government's performance requirements, and also that they were designed as well to conform to these performance requirements. We think that any such requirement with respect to design guarantees, particularly when it relates to the design of a weapon system as a whole as distinguished from one of its components, makes no sense at all. Certainly, in the cases involving our member companies with which we are familiar, the contractor in production work is in no position to provide guarantees with respect to a weapon system design that was developed or at least approved by the government and, at all times, was within the government's complete control even with respect to technical details.

There are instances, of course, where much of that design work was done by another contractor, and certainly the first contractor is in no position to warrant the design work performed by another. Thus, the warranty requirement will make it more difficult to obtain competition with respect to production contracts.

Finally, we suppose it is conceivable that, despite the fact that the statute refers to the warranty requirement in connection with production contracts, a contractor may be required to guarantee a design in connection with design work under such a contract. This, too, strikes us as undesirable. The whole concept of design, presumably, is to exert one's best effort to achieve the desired objective without any certainty as to being able to do so.

To sum up on this point, any guarantees as to design should, at the most, be limited to those parties responsible for developing the design; even in those cases, we think there is substantial doubt as to whether design guarantees are in the government's best interest.

THE RESULTING BURDEN ON SUBCONTRACTORS

One of the major problems created by the statutory warranty requirement, it seems to us, is that it contradicts a number of current major policies with respect to procurement and will make the attainment of most of these objectives virtually impossible.

For example, there is considerable emphasis at the present time on the establishment of make-or-buy programs under which prime contractors and higher-tier subcontractors are urged, in the interest of efficiency and economy, to subcontract a major part of their contract work. But the new statutory warranty requirement requires the contractor to be responsible for the weapon system and each component thereof, so it is required, at least implicitly, to pass this requirement on down the subcontract chain. If it is subsequently determined by the government that a written guarantee with respect to a particular component was not met, that contractor will be responsible to the government and, in turn, will seek redress from the subcontractor which furnished that particular item. Under these circumstances, the prime contractor will have two options, neither of which we think is desirable from a public policy point of view. Either the work with respect to that component will be "pulled in-house" by the contractor or, if this is not possible for other reasons, the prime contractor in order to protect itself will almost certainly demand from the subcontractor an indemnification commitment with respect to any potential prime contractor liability concerning the component in question.

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Clearly this adverse effect of the requirement on subcontractors generally will fall with particular force on small business and minority subcontractors. Even if their work is left with them, they unquestionably will find any prime contractor indemnification provisions particularly onerous to comply with.

Of particular significance at the present time is the adverse result of the statutory requirement on the drive by DOD to attain greater competition in the procurement of spare parts. The point here is that the warranty requirement may cover both initial and replenishment spare parts, and the contractor is not going to be in any position to provide guarantees with respect to spare parts furnished by any parties other than itself.

To sum up, the statutory warranty requirement will make the subcontractor's position even more difficult than it has been in the past and will significantly obstruct existing government policies to assist small business and minority subcontractors, and also increase competition in the procurement of spare parts. Moreover, we believe that relationships between prime contractors and subcontractors will be disrupted and probably exacerbated by the new requirements.

INCREASED CONTRACT COSTS

There seems little doubt that the statutory requirement will substantially increase contract costs. At the outset, it is clear that contractors generally are expected to charge for such warranty protection as an additional line item in a given contract. This would appear to assume that such contracts will be on a fixed-priced basis, but the statute does not so state and, indeed, the proposed draft DOD guidance on the subject, as the Committee probably knows, indicates that the warranty requirement applies to cost reimbursement contracts as well. In any event, it is clear that the requirement will represent a new and substantial cost with respect to contracts on which DOD, under the DAR policy prior to the statutory requirement, would not have required a contractor warranty. There is also the question of how such warranties will be costed for pricing purposes; so far as we are aware, this problem has been given very little attention.

Beyond the direct costs of the required statutory warranties as such, there will be the additional costs that inevitably will result from controversies, disputes, and litigation concerning the required guarantees. On this point, we think that past experience with regard to existing DAR warranty policy and the Inspection and Correction of Deficiencies clauses is no real indication of the problems and costs that are likely under the statutory requirement, simply because under the statute the warranties must extend to all covered contracts and the resulting guarantees must cover design as well as manufacturing.

EFFECT ON THE DEFENSE INDUSTRIAL BASE

Finally, there will be, in our judgment, a very serious and adverse impact on the defense industrial base as a result of the new statutory warranty requirement. Obviously there will be at least some prime contractors and higher-tier subcontractors which will be in no position to furnish certain guarantees—particularly design guarantees—and which are likely to refuse to continue to do such business unless they can be protected by a waiver under the statute on the grounds of either national defense or lack of cost effectiveness. Even more likely, in our view, is the potential adverse impact on the smaller subcontractors furnishing possibly a small part of a particular component in the weapon system, if some of the subcontract work previously given to such companies is now to go "in-house" with the prime contractor or higher-tier subcontractor. Such subcontractors are likely either to go out of business completely or become unwilling to continue their availability as a potential source for the component part in question.

In other cases where there is no attempt by the prime contractor or the higher-tier subcontractor to bring that component part in-house, there is likely to be, as we have pointed out, some sort of indemnification commitment required of the small subcontractor. In many cases, we think it certain that the small subcontractor will not be in any position to provide that indemnity because of the financial risks involved. In some cases admittedly the indemnification may be granted, in which instance there is the possibility that, if the indemnification is ultimately exercised, it could well put the small subcontractor out of business.

In sum, it seems obvious that the statutory warrantly requirement will inevitably have an adverse effect on the defense industrial base, and will, to that extent, worsen an already bad situation.

CONCLUSION

We think that any one of these reasons, taken individually, supports the assertion that the statutory warrantly requirement is unworkable and should be repealed. In our view, the cumulative impact of these considerations makes overwhelming the case for "unworkability" and, subsequently, repeal.

There are our comments on the warranty requirements for defense contracts mandated by Section 794 of the Fiscal Year 1984 Defense Appropriation Act. If we can be of any further assistance please let us know.

Respectfully,

CHARLES W. STEWART, *President.*

PREPARED STATEMENT OF M. LEE RICE, PRESIDENT, SHIPBUILDERS COUNCIL OF AMERICA

Mr. Chairman and members of the Committee, I am M. Lee Rice, President of the Shipbuilders Council of America, the national trade association representing the principal domestic shipbuilders, ship repairers, and suppliers of equipment and services to the industry. A copy of our membership list is attached. I request that our entire statement be made a part of the record of this hearing.

THE NEW WARRANTY REQUIREMENT

Under the new Section 794 of the FY 1984 Department of Defense Appropriations Act, DoD is required to obtain from the prime contractor in every new weapon system contract a guarantee that ". . . the system and each component thereof were designed and manufactured to conform to the Government's performance requirements as specifically delineated . . ." in the contract and every other agreement related to it. The shipbuilding industry does not believe that the new legislative mandate for warranties will, as its proponents state, save the Government money and improve readiness, but rather will serve to raise cost and delay delivery of weapon systems without concommitant benefit to the Government or national security.

It is appropriate to require contractors to stand behind their work. The shipbuilding industry has, for many years, provided warranty on new vessels. These warranty provisions have served the avowed purpose of Section 794 in ensuring that the Navy obtains high quality in the work it purchases from shipbuilders.

The nature and extent of the current warranty practice is important in considering the problems which are certain to develop under the new law.

PERFORMANCE REQUIREMENTS CANNOT BE GUARANTEED BY CONTRACTORS WITHOUT OBTAINING CONTROL OF REQUIREMENTS DEFINITION AND DESIGN

A major problem which will be caused by Section 794 is the new type of guarantee required. Shipbuilders routinely guarantee work against defects in materials and workmanship, this is their work. Under the new law, we are now required to guarantee that the ship will meet the Government's performance requirements after delivery when built to the Government's specifications.

The problem arises as a result of the confusion in statutory language over the term "performance requirement" as it must be.

He has no burden of repeating the research and development work attendant to the Government's design. Because of the need for Government control over design, definition of requirements, and means of operation, it is virtually impossible to provide the guarantee of performance required under Section 794.

Current practice is based upon Section 1-324 of the Defense Acquisition Regulations ("DAR"). Proponents of Section 794 contend that the objective of the new law is only to enforce Section 1-324. Unfortunately, it goes much farther.

Under DAR 1-324, warranties are not mandatory but are permitted when found to meet certain criteria. Among the most important of these criteria is the contractor's control over the design:

It is important to consider the nature of the item and its end use in determining whether a warranty is appropriate. This consideration has various facets, such as the complexity and function of the item, the degree of the development of the item and the state of the art, the difficulty in detecting defects prior to acceptance by the Government, and the potential harm to the Government which could result if the items were defective . . . *The type of specification involved should also be considered. When the design of the item is specified in detail by the Government, the con-*

tractor's obligations under a warranty normally extend only to defects in material and workmanship or failure to conform to specifications. When the Government does not specify the design, the warranty extends also to the usefulness of the design (emphasis added).

DAR 1-324(b)(1). Because naval vessels are rarely built under contractor-specified performance requirements or contractor-controlled specifications, the regulations are consistent with current practice: warranties against defects in materials and workmanship, not transference of responsibility for design adequacy without design authority as imposed under Section 794.

Shipyards seek greater responsibility for design work as a means of improving vessel performance and cost. Shipbuilders cannot guarantee that performance requirements will be met by Government designs. Shipbuilders can warrant that their work will be consistent with contract requirements where they have performed the work.

THE NEW GUARANTEE REQUIREMENT WILL ADD TO THE COST OF WEAPON SYSTEMS AND DELAY THEIR DELIVERY

As shown in the enclosed diagram, current combatant vessel construction contracts are generally accomplished in four stages: award; construction design; construction; and delivery. With the advent of the new performance requirements guarantee, the process is lengthened considerably to consist of: award; construction design; verification that construction design meets performance requirements; correction of construction design as necessary; start construction; and delivery. Whenever the Government exercises its unilateral right to change the design (which may occur many of times during construction of ships) the entire process must be repeated.

The additional time needed to ensure that the design meets top-level performance requirements translates into one thing: a higher cost for the ship. The cost of these delays and the work entailed cannot be estimated. The cost will assuredly not be trivial. To add this artificial cost element to the price of weapon systems at a time when there is so much political energy being spent on devising a list of programs to cut from the defense budget is inappropriate.

SECTION 794 SHOULD BE REPEALED

Implementation of Section 794 will pose exceptional difficulties, as may be seen from the proposed regulations published by the Department of Defense on January 20. Because the statutory language leaps into terminology without defining it and uses some words interchangeably without base definitions, the regulations will result in complex and costly argument and litigation. Following the law in some cases and exceeding it in others, the regulations:

Fail to implement the statutory mandate that guaranteed performance requirements be "specifically delineated", leaving contractors to search through every document related to the contract to determine exposure under the guarantee if they can;

Fail to integrate the guarantee requirement with inconsistent procurement policies and practices such as cost-reimbursement or flexibly-priced contracts and the changes clause;

Limit improperly negotiators' ability to agree on the circumstances which will void the warranty in whole or in part;

Require retroactive application of the law affecting priced options, basic ordering agreements, and existing letter contracts despite the clear statutory language affecting only contracts awarded after date of enactment;

Provide Government remedies which substantially exceed those set out in the statute;

Require expensive revision of contractors' bidding accounting and cost tracking system; and

Require the contractor to chart the course of every vessel and track vessel changes by crew and other contractors changes and modifications which assuredly will occur.

CONCLUSION

Because shipbuilders provide warranties on new ships, and because these warranties achieve the goals sought under Section 794 without imposing the serious problems it will create, we submit that there is no need to impose a mandate for "performance requirements" guarantees in ship procurements. We believe that that

same is true for other weapon systems. Therefore, Section 794 should be repealed promptly. Unless this repeal is accomplished, the cost impact will soon appear.

Should this Committee determine, after full hearings and investigation, that a warranty should be imposed by law, we recommend that the language begin with the words of DAR 1-324, not with Section 794, which is not easily or practically implemented and assuredly not a "quick fix".

2/1/84
DJH

ANALYSIS OF THE IMPACT OF THE FY 84 DEFENSE APPROPRIATIONS ACT

1.0 WARRANTY RESPONSIBILITIES

ITEM	PRESENT		FY '84 DEFENSE ACT (PL 98-212)	
	U.S.	S/B	U.S.	S/B
A. Design				
Requirement Definition	X		X	
Spec. Suitability	X			X
Conceptual Engineering	X			X
Systems Engineering	X			X
Applications Engineering		X		X
B. Material				
Definition	X			X
Designation	X(30%)	X(70%)	X(30%)	X(70%)
Procurement	X(GFE/GFM)	X(CFE/CFM)	X(GFE/GFM)	X (CFE/CFM)
Quality				X
C. Workmanship				
Contractor Manufacture		X		X
Vendor Manufacture		X		X
GFE/GFM.	X		X	
Installation		X		X

2.0 NORMAL DESIGN PHASES AND RESPONSIBILITIES

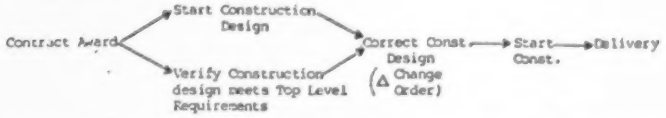
A. Design Phases				
Top Level Requirements (TLR)	X		X	
Preliminary Design	X		X	
Contract Design & Specs.	X		X	
Construction Design				X

3.0 IMPACT OF NEW WARRANTY REQUIREMENTS

A. Present Pre-FY'84 Contracts

Contract Award → Start Construction Design → Construction → Delivery

B. FY '84 Requirements



4.0 SYNOPSIS

The FY '84 Defense Appropriations Act shifts responsibility for warranty of specification suitability to the shipbuilder. This requires the shipbuilder to verify the construction design, including the adequacy of the design specification. In addition, the shipbuilder becomes responsible for performance of GFE/GFM - items for which he normally has only installation responsibility. The shipbuilder also becomes responsible for warranty of suitability of the Governments conceptual and systems engineering.

The bottom-line is nearly unmeasurable increased risk to the Shipbuilder, and increased acquisition costs and extended construction cycles to the Government.

—END—

ATTACHMENT

REGULAR MEMBERS

ADDSCO Industries, Inc., Post Office Box 1507, Mobile, AL 36601.
The American Ship Building Co., Suite 800, Lincoln Pointe Building, 2502 Rocky Point Road, Tampa, FL 33607.
Amship Division; Lorain, OH.
Tampa Shipyards, Inc., Tampa, FL.
Avondale Shipyards, Inc., Post Office Box 50280, New Orleans, LA 70150.
Bath Iron Works Corp., 700 Washingon Street, Bath, ME 04530.
Bay Shipbuilding Corp., 605 N. 3rd Avenue, Sturgeon Bay, WI 54235.
Bethlehem Steel Corp., Shipbuilding Division, Bethlehem, PA 18016, Beaumont, TX, Sparrows Point, MD.
Coastal Dry Dock & Repair Corp., Brooklyn Navy Yard, Building 131, Brooklyn, NY 11205.
Dillingham Maritime Group, P.O. Box 4367, Portland, OR 97208.
FMC Corporation, Marine and Rail Division, 727 South 23rd Street, Arlington, VA 22202.
General Dynamics Corp., Pierre Laclede Center, St. Louis, MO 63105.
Electric Boat Division, Groton, CT and Quonset Point, RI.
Quincy Shipbuilding Division Quincy, MA and Charleston, SC.
General Ship Corp., 400 Border Street, East Boston, MA 02128.
Hoboken Shipyards, Inc., 1301 Hudson Street, Hoboken, NJ 07030.
Ingalls Shipbuilding Division, Litton Industries, Post Office Box 149, Pascagoula, MS 39567.
Jacksonville Shipyards, Inc., 750 East Bay Street, Post Office Box 2347, Jacksonville, FL 32203.
Jeffboat, Incorporated, P.O. Box 610, 1030 East Market Street, Jeffersonville, IN 47130.
Lockheed Shipbuilding and Construction Company, 2929 Sixteenth Avenue, SW, Seattle, WA 98134.
Marine Power & Equipment Co., Inc., 1441 North Northlake Way, Seattle, WA 98103.
Marinette Marine Corp., Ely Street, Marinette, WI 54143.
Maryland Shipbuilding & Drydock Co., Post Office Box 537, Baltimore, MD 21203.
National Steel & Shipbuilding Co., Harbor Drive at Twenty-Eighth Street, Post Office Box 80278, San Diego, CA 92138.
Newport News Shipbuilding, 4101 Washington Avenue, Newport News, VA 23607.
Norfolk Shipbuilding & Drydock Corp., Post Office Box 2100, Norfolk, VA 23501, Norfolk, VA (2 plants), Berkeley, VA.
Northwest Marine Iron Works, Post Office Box 3109, Portland, OR 07208.
Pennsylvania Shipbuilding Company, P.O. Box 442, Chester, PA 19016.
Peterson Builders, Inc., 101 Pennsylvania Street, P.O. Box 47, Sturgeon Bay, WI 54235–0047.
Savannah Shipyard Co., Post Office Box 787, Savannah, GA 31402.
Southwest Marine, Inc., Foot of Sampson Street, Post Office Box 13308, San Diego, CA 92113.
Todd Shipyards Corp., Todd Pacific Shipyards Corp., One State Street Plaza, New York, NY 10004, Alameda, CA, Brooklyn, NY, Galveston, TX, Houston, TX, Los Angeles, CA, New Orleans, LA, San Francisco, CA, Seattle, WA.
Tracor Marine, Inc., Post Office Box 13107, Port Everglades, FL 33316.

ALLIED INDUSTRIES MEMBERS

American-Standard, Industrial Products Group, Williamsville, NY.
Bird-Johnson Co., Walpole, MA.
Borg-Warner Corp., York Division, York, PA.
Colt Industries, Inc., Wahington, DC.
Combustion Engineering, Inc., Windsor, CT.
Eaton Corp., Cutler-Hammer Products, Rockville, MD.
General Electric Co., Schenectady, NY.
Gould, Inc., Systems Protection Division, Horsham, PA.
Hopeman Brothers, Inc., Waynesboro, VA.
Jamestown Metal Marine Sales, Inc., Boca Raton, FL.
Jered Brown Brothers, Inc., Troy, MI.
Lake Shore, Inc., Iron Mountain, MI.
MacGregor-Navire (USA), Inc., Cranford, NJ.

Milwaukee Valve Company, Inc., Milwaukee, WI 53207.
Raytheon Service Company, Arlington, VA.
Sperry Corp., Marine Systems, Great Neck, NY.
Transamerica Delaval, Inc., Trenton, NJ.
Ward Leonard Electric, Co., Inc., Mount Vernon, NY.
Western Gear Corp., Lynwood, CA.
Westinghouse Electric Corp., Pittsburgh, PA.
Worthington Pump Corp., Harrison, NJ.

NAVAL ARCHITECT MEMBERS

J.J. Henry Co., Inc., New York, NY.
John J. McMullen Associates, Inc., New York, NY.
Gibbs & Cox, Inc., New York, NY 10001.

ASSOCIATION MEMBERS

The American Waterways Operators, Inc., Arlington, VA.
New England Ship Repair Yard Assn., East Boston, MA.
New York and New Jersey Dry Dock Assn., New York, NY.
Western Shipbuilding Assn., San Francisco, CA.

AFFILIATE MEMBERS

Tomlinson Refrigeration & Supply Co., Elizabeth, NJ.
Standard Marine Services, Inc., Bayonne, NJ.
New York Protective Covering Industries, Inc., Brooklyn, NY.
C-O-Two Sales & Service, Hoboken, NJ.
Ocean Electronics, Inc., Brooklyn, NY.
Terry Corporation, New London, CT.
Hayward Industrial Products, Inc., Elizabeth, NJ.
Poten & Partners, Inc., New York, NY.
McNab, Inc., Mount Vernon, NY.
McLean Contracting Company, Baltimore, MD.
Tidewater Construction Corporation, Norfolk, VA.
Williams & Watts, Inc., Fairfield, NJ.
Seacoast Electric Supply Corp., Rye, NY.
ManTech International Corporation, Alexander, VA.
Pepper Industries, Inc., San Diego, CA.
Maersk Line, Limited, New York, NY.
Foley, Hoag & Eliot, Boston, MA.

[Questions submitted by members of the Senate Armed Services Committee to be answered for the record:]

QUESTIONS SUBMITTED BY SENATOR JOHN TOWER

IMPLEMENTATION OF SECTION 794

Chairman TOWER. What are the practical problems that you anticipate as you implement section 794?

Dr. DELAUER. The immediate implementation problems will center on time delays to ongoing work and the difficulty in developing and negotiating contract language. The waiver process presents a difficult administrative task for both whole waivers and partial waivers of which we feel there will be a significant number. The acceptance by industry and all the suppliers will be difficult as we have heard from their comments and testimony. The effect on our ongoing Departmental initiatives for competition, spare parts and breakout will suffer. The resultant effect on small and disadvantaged business because of less opportunity for competition will be severe, as will the financial liability that many will not be able to accept. With no data base for a universal warranty, as envisioned by the law, we and industry will have difficulty in deriving a basis for determining a reasonable price for the warranty.

Admiral WHITE. The Navy will face practical problems as section 794 is implemented. For example, the Navy must identify in its specifications those specific performance requirements that should be covered by warranties; the Navy must decide on the duration of the warranty, and whether the costs for the warranty are reasonable and fair. In addition, the Navy must insure that the warranties are managed and administered effectively.

IMPLEMENTING SECTION 794

Chairman TOWER. Admiral White, General Stansberry in his statement said that he is convinced that "literal and immediate implementation of section 794 across all systems is impractical and creates a substantial risk of significant delays in current programs and future financial and administrative burdens well beyond the desire benefits sought to be achieved."

Do you agree with this comment?

Admiral WHITE. The Navy's General Counsel has interpreted section 794 differently than the other sections. By the Navy's interpretation, compliance with section 794 can be achieved without creating substantial risk of significant delays in current programs or future financial and administrative burdens.

Chairman TOWER. Admiral White, you seem not to be concerned about implementing section 794. Let's take an example of how it would work.

The Navy proposes to build a new attack submarine in the next few years. If the shipyard which builds the lead ship of the new class must warrant all the performance capabilities of the ship—including some very difficult and sensitive aspects like noise—isn't the shipyard going to demand a huge insurance premium for accepting the risk that it might have to substantially redesign and rebuild the ship if it happens not to meet all performance specifications?

Admiral WHITE. With respect to the design process for the lead ship of a new class, the process commences with Concept Design then Preliminary Design, Contact Design and Detail Design. During the process there is an evolving working relationship between the design agents, the Navy and shipbuilders and there is agreement on the design so that when the design package is offered for competition there is minimal risk regarding the ability of shipbuilders meeting the performance requirements. Further, during construction there are numerous installation, checkout and testing processes as well as trials and shakedowns that occur prior to acceptance that are sufficient to detect defects in material or workmanship and failures to meet performance requirements.

ANDREWS AMENDMENT

Chairman TOWER. Dr. DeLauer, do you agree that the Andrews amendment has all of the flexibility which he describes?

Dr. DELAUER. No, very little flexibility is available as written because it applies to all production contracts, to all performance requirements, and the contractor must bear all the costs. This leaves very little opportunity to selectively apply different types of warranty arrangements to selected programs and selective performance parameter(s) without going through a very costly waiver process. The law does not provide any recognition for existing performance incentive arrangements we use on a great number of programs, such as space programs where we have incentives that result in penalties for failure, but not the requirement to repair or replace the item. The selection of incentives, regardless of the form it takes, must be a part of the whole acquisition strategy from the start and not just addressed at the end in the production phase of a program.

Senator TOWER. Senator Andrews, how do you anticipate that the waiver provision in section 794 will be used? Would it be used frequently or would it be used in only the most extraordinary circumstances?

Senator ANDREWS. The law mentions that a waiver can be exercised in the interest of the national defense or in cases where the guarantees are not cost-effective.

In cases where waivers are used in the interest of national defense, waivers obviously can be used where delays over the negotiation of warranties obstruct the delivery of weapons to U.S. armed forces fighting in armed conflict.

Where cost-effectiveness is concerned, the waiver provision is to be used in those cases where the manufacturer's total cost for a weapon system under guarantee, is exorbitant.

If discovered thereafter that the weapon's guarantee is the significant factor in the weapon's cost, a waiver can be exercised.

This does not mean, however, that the Congress proceed and provide the necessary funds for the weapon's production. A guarantee with significant cost could mean the weapon is unreliable and may not perform as intended. It may be an indication that the manufacturer is attempting to protect himself financially from the potential cost he may incur to repair or replace the weapon's defective materials, workmanship, and/or substandard performance.

Congress should seriously investigate guarantees with significant costs to see whether or not there are legitimate reasons to waive the warranty requirement and still proceed with the weapon's production.

All totaled, defense contractors should be able to back their product with confidence and that confidence should be reflected in their guarantee. Therefore, use of the waiver should be used only in the most extraordinary circumstances.

Chairman TOWER. Senator Andrews, I think your directing our attention to warranties raises a larger problem—whether the transition from development to production of a weapon system is a sound procedure.

You have expressed concern about weapon systems that don't work, but that should happen only when we go to production before a system has been proven effective. Performance guarantees may or may not be the answer to this larger problem.

Would it be more advisable to hold off on section 794 for a little while to look at the larger problem and to determine how it is that we sometimes get systems into production that don't seem to meet all operational requirements?

Senator ANDREWS. Requiring warranties addresses the problems you raise in your question, namely assuring the Congress and the American taxpayer that weapons will meet their military mission and protect the lives of U.S. Armed Forces.

The manufacturer, by providing a guarantee, shows how confident he is that the weapon system will perform as intended. Guarantees provide this critical information before a weapon system goes into production. The manufacturer's confidence, as shown through his guarantee, may also reflect the extent to which the weapon was tested and evaluated while in development.

All this information, again, revealed before the weapon's production, will significantly decrease cost overruns and costly delays caused by weapons with faulty performance which have been in produciton for some time.

It would be inadvisable, therefore, to hold off on section 794 because it is a necessary check that weapons systems will be reliable. Section 794 should contribute to putting an end to those systems that do not meet their performance requirements and yet are allowed into production.

QUESTIONS SUBMITTED BY SENATOR STROM THURMOND

WARRANTY REQUIREMENTS

Senator THURMOND. Dr. DeLauer, how would warranty requirements impact on the President's strategic defense program in view of the fact that we will be pushing our technologies to expand rapidly?

Dr. DELAUER. We would be very concerned that warranty requirements might inhibit industry from using the advanced technologies which will be necessary to get the best performance for this critically important strategic need. Any time we push the leading edge of technologies it relates directly to risk and the allocation of risk. The more we transfer that risk to a contractor through a warranty requirement the more the contractor will try to reduce his risk to avoid his liabilities or exposure and in so doing, he will opt to follow the least risky technology that will satisfy the requirement. In so doing, our advancement of technologies will be directed to more conservative objectives and work counter to the President's strategic defense program.

SERVICE DESIGN CHANGES

Senator THURMOND. Would each of the service representatives outline for the record service-generated design changes in recent weapon systems that would not have been accepted had producers been forced to provide warranties on these systems?

ARMY

General BABERS. Based on our recent survey as a result of the Senator's question, we are not aware of any design changes in recent weapon systems that would have been rejected had there been a warranty.

NAVY

Admiral WHITE. The Navy does not collect data where producers have rejected or refused to provide warranties on Service-generated design changes, but only for very good reasons such as enhancing safety characteristics and reducing production or life cycle costs.

General STANSBERRY. We have no examples, to date, of contractors refusing design changes to Air Force weapon systems because of contractor risk exposure under an existing warranty/guarantee contract provision. The Air Force sometimes incorporates medium or high-risk design changes into its weapon systems to meet operational requirements. A recent example is the Dual Role Fighter change which will be incorporated into future F-15 aircraft.

The application of warranties and other product performance agreements to hold contractors responsible for design changes to Air Force weapon systems will continue to be a discussion item in Air Force acquisition planning. Where use of a warranty/guarantee is deemed appropriate in these discussions, an effective warranty/guarantee will be tailored to the specific acquisition.

Senator THURMOND. How are you going to be responsible for parts on equipment when they break down in Korea or Germany?

Mr. BURT. Realistically, I believe the most cost effective way for contractors to be responsible for part failures on equipment in Korea or Germany, is to have the Service replace the part on site from its spares supply, and then to have the contractor replenish the spares supply pipeline.

Senator THURMOND. Will you continue to push technology to the limits or will you stop with proven, mature technology in weapons development?

Mr. BURT. If the question assumes the present warranty law, which contains previously discussed "open-ended" system performance guarantees, then I believe contractors would generally be forced to limit their liability through the use of tested, reliable technology. It seems reasonable to conclude that we would not "continue to push technology to the limits".

Senator THURMOND. The Military Services make most design changes during development of weapons.

How will warranty requirements impact upon your acceptance of externally generated design changes?

Mr. BURT. We would naturally become more conservative in our acceptance of externally generated design changes. In my prior statement I referred to our reservations about bidding on a vehicle which had been designed by another contractor. The new warranty law would drive us toward even less participation in the manufacture of designs which we fundamentally question, and certainly couldn't guarantee.

QUESTIONS SUBMITTED BY SENATOR DAN QUAYLE

Senator QUAYLE. Senator Andrews, you have expressed previously that you feel warranties will increase competition. Many small businesses have expressed to me that they cannot bear the increased risk involved in a warranty and that they may have to stop bidding on defense contracts.

How specifically do you feel warranties, in and of themselves, will increase competition?

Senator ANDREWS. The contribution warranties have made to enhancing competition in the private sector for the last twenty-five years speaks for itself. There is no obstacle whereby warranties will contribute to creating the same competition between firms seeking contracts for weapons systems.

Requiring guarantees will increase competition because more firms could compete for defense contracts by offering stricter, and therefore, more attractive guarantees. As a viable alternative to price competition, stricter warranties could be the opportunity allowing more business, large and small, to compete for defense contracts.

Senator QUAYLE. Senator Andrews, do you believe small businesses will be adversely affected once your warranty provision is fully implemented?

Senator ANDREWS. No, in fact small businesses should be able to enhance their competition for defense contracts with the warranty provision.

Small firms, specifically oriented towards producing various weapons or components can compete for defense contracts on a more equal footing with larger companies by offering better guarantees. These guarantees could be of longer duration or conclusively show improved reliability or substantial cost-savings.

Some responses to section 794 nevertheless indicate that the law will mean increased financial risk and unlimited liability. This is not correct.

As I explained in my testimony before the Committee, Section 794 offers considerable flexibility by permitting warranties to reflect differing degrees of responsibility in cases, for example, where the Government is deeply involved in the weapon's design.

Another example of the law's flexibility is the responsibility it leaves to manufacturers as to the kinds and degree of warranty coverage that can be offered on weapons systems.

Warranties on weapons systems should reflect the manufacturer's confidence in how the weapon or component will perform. Opportunity for a company to win a contract could increase or decrease depending, in many ways, on the warranty offered. If a warranty falls below the specifications, the latter may occur, if the warranty exceeds the specifications, chances for contract award may increase.

As you know, Congress put specifics into the law requiring a warranty on the derivative fighter engine. Congress specified 3,000 tactical cycles, or approximately 8 years.

That kind of specifics was not put into this law because warranties need to be negotiated on a weapon-by-weapon basis.

One final example of the law's flexibility and its benefit to businesses large and small is that warranties on production-run weapons could be negotiated after the prototype has been tested.

Again, as my testimony indicated, after the tests and evaluation of the weapon prototype that was designed and built to specifications, a warranty can be confidently provided in the production contract. Before the production contract, however, tests and evaluation may mean changes in technology, design, and eventual capability. Warranty coverage, therefore, when the weapon is ready for production, would reflect the changes made to the weapon when it was in development

Requiring warranties on weapon production contracts is the major thrust of the law. Before signing the production contract, the Congress, the taxpayer, and the U.S. Armed Forces should know weapons will work as intended; requiring warranties for weapons systems will demand nothing less.

Senator QUAYLE. Senator Andrews, how might DOD soften the adverse impacts on small business in implementing this legislation?

Senator ANDREWS. As the previous answer indicates, small businesses should be able to enhance their competition for defense contracts with the warranty provision.

DOD's policy guidance and regulations need to recognize that the law's objective is to enforce by law many of the warranty provisions in DAR 1-324.

Small businesses should have experience using these regulations and if enforced and used effectively, could be used to expand the industrial base of many small businesses.

WARRANTIES

Senator QUAYLE. Dr. DeLauer, in your opinion, when are warranties truly cost effective and useful?

Are they only useful as they pertain to materials and workmanship, or are performance warranties valuable tools for increasing the effectiveness of weapons systems?

Dr. DELAUER. The warranty for defective material and workmanship are always useful and we are currently using them. Performance warranties can be a valuable tool when used properly to insure performance levels of critical characteristics or high cost drivers of certain components are selectively chosen for application. But these performance warranties must be done early in a program, part of the total acquisition strategy, carefully analyzed and negotiated, and above all applied during a competitive environment. The acknowledgement going into FSD that you are planning to apply a performance warranty in the production of the equipment frequently produces the proper emphasis during the design of the equipment such that you may no longer need the performance warranty on the production item.

SECTION 794

Senator QUAYLE. Dr. DeLauer, could you provide for the Committee an assessment of the input you have received from the small business community regarding section 794?

Do you find the comments from small businesses reflect more concern than those from other contractor sectors?

Dr. DELAUER. Two major concerns stand out. First, the small businesses are concerned about the allocation of risk that would flow down to them from the prime contractor and the liability this risk will create for them financially. They know this financial liability can be a problem for them in conducting their business, especially when they go to borrow money. Many indicated they cannot afford this type of liability and they may have to decide not to do business with the government. The second area of concern was that frequently they are not involved in the design

of an item, but are involved with "build to print" parts and they feel they shouldn't have to guaranty the performance requirements. This area is a further concern to them where even if they provide their own commercially designed products, they are not involved in the decisions made by the primes and corresponding changes affecting performance or the unilateral changes made by the government that could impact on their products, and yet they have a responsibility to guaranty their product. It is the distribution of responsibility to guaranty their products that is imposed on them by the primes and subcontractors that carries the potential financial ruin that they are afraid may not be acceptable and will cause them to take their business elsewhere. Of course, these same concerns were universally expressed by most of the contractors.

Senator TOWER. The committee is adjourned.

[Whereupon, at 4:18 p.m., the committee adjourned, subject to the call of the Chair.]

APPENDIX A

SECTION 794, DEPARTMENT OF DEFENSE APPROPRIATIONS ACT OF 1984

SEC. 794. (a) Except as otherwise provided in this section, none of the funds appropriated by this or any other Act may be obligated or expended for the procurement of a weapon system unless the prime contractor or other contractors for such system provides the United States with written guarantees—

(1) that the system and each component thereof were designed and manufactured so as to conform to the Government's performance requirements as specifically delineated (A) in the production contract, or (B) in any other agreement relating to the production of such system entered into by the United States and the contractor;

(2) that the system and each component thereof, at the time they are provided to the United States, are free from all defects (in materials and workmanship) which would cause the system to fail to conform to the Government's performance requirements as specifically delineated (A) in the production contract, or (B) in any other agreement relating to the production of such system entered into by the United States and the contractor; and

(3) that, in the event of a failure of the weapon system or a component to meet the conditions specified in clauses (1) and (2)—

(A) the contractor will bear the cost of all work promptly to repair or replace such parts as are necessary to achieve the required performance requirements; or

(B) if the contractor fails to repair or replace such parts promptly, as determined by the Secretary of Defense, the contractor will pay the costs incurred by the United States in procuring such parts from another source.

(b) A written guarantee provided pursuant to subsection (a) shall not apply in the case of any weapon system or component thereof which has been furnished by the Government to a contractor.

(c) The Secretary of Defense may waive the requirements of subsection (a) in the case of a weapon system if the Secretary—

(1) determines that the waiver is necessary in the interest of the national defense or would not be cost-effective; and

(2) notifies the Committees on Armed Services and Appropriations of the Senate and the House of Representatives in writing of his intention to waive such requirements with respect to such weapon system and includes in the notice an explanation of the reasons for the waiver.

(d) The requirements for written guarantees provided in subsection (a) hereof shall apply only to contracts which are awarded after the date of enactment of this Act and shall not cover combat damage.

POLICY GUIDANCE

Section 794 of the Department of Defense Appropriations Act, 1984 requires that written guarantees be obtained in connection with the procurement of weapon systems. This guidance is issued to provide for implementation of section 794. It sets forth the policy and procedures for requiring and obtaining such guarantees at the weapon system and/or component level. To the extent this guidance may be inconsistent with th provisions of DAR 1-324, this regulation shall control.

1. Definitions—

For purposes of this guidance:

(a) "Weapon System" is equipment which, without substantial modification, is or can be used directly by armed forces to carry out combat missions. By way of illustration, the term includes bombers, fighter aircraft, attack helicopters, combat naval vessels, strategic and tactical missiles, tanks, combat vehicles, small arms, torpedoes, bombs and artillery. The term includes software, ordnances, related support equipment such as, ground handling equipment, training devices, test equipment and accessories thereto.

(b) A "component" is an assembly or any combination of parts, subassemblies, and assemblies mounted together in manufacture, assembly, maintenance, or rebuild. Spare parts, per se, are not deemed components unless otherwise fitting this definition.

(c) A "procurement" is a direct contract between the government and a contractor for the production of a weapon system and/or components thereof, irrespective of contract type.

(d) A "specified performance requirement" is any specifically delineated mandatory performance requirement set forth anywhere in a government production con-

tract for a weapon system or in any other agreement relating to the production of such system incorporated or referenced in such contract.

(e) "Conform" means designed and manufactured so as to meet or achieve, or both, the government's specified performance requirement.

(f) "Bear the cost of" means at no increase in contract price irrespective of contract type. The written guarantees set forth in a contract award for the production of a weapon system shall be a separately priced firm fixed price line item.

(g) "At no cost to the government" means that the cost will not be reimbursed the contractor directly or indirectly under the production contract for the weapon system or an other government contract (except for the firm fixed price guarantee line item).

2. This guidance applies only to contract awards made subsequent to March 14, 1984.

For purposes of this guidance:

(a) A modification to a contract to add additional quantities constitutes a contract award.

(b) The exercise of a priced production option even where no further definition or negotiation of terms is required constitutes a contract award.

(c) The notice to proceed with quantities after the first year quantity in a multiyear procurement does not constitute a contract award.

(d) The placement of an order under a basic agreement or basic ordering agreement constitutes a contract award.

(e) The definitization of an existing redeterminable contract does not constitute a new award.

(f) The definitization of a letter contract constitutes a contract award.

3. Except to the extent otherwise provided herein, all government contracts for the production of a weapon system or components thereof shall contain a clause:

(a) Guaranteeing that the weapon system and each component thereof were designed and manufactured so as to conform to the government's specified performance requirements and that, at the time of delivery to the government, the weapon system and each component thereof are free from such defects in materials and workmanship as would cause the system to fail to conform to the government's specified performance requirements delineated in the contract.

(b) Guaranteeing that the contractor will bear the cost of all work promptly to repair or replace such parts as are necessary to achieve the required performance requirements and providing that if the contractor fails to repair or replace parts promptly as required by the contract, the contractor will reimburse the government for any cost incurred by the government in procuring such parts from another source.

4. A model clause that may be used for this purpose in contracts for less complex weapons systems is attached. For complex systems, where different types of requirements (see paragraph 5) are present, special guarantee clauses may be written.

5. The written guarantees called for herein pertaining to design and manufacture so as to conform to the government's specified performance requirements will generally be of either or both of two types:

(a) Where the specified performance requirement(s) is a test or demonstration and the requirement(s) is deemed to be satisfied upon the satisfactory completion or the specified test or demonstration, e.g., of a first prototype or production unit, the guarantee shall provide that, in the event of a failure of a weapon system or component to complete satisfactorily the specified test or demonstration, the contractor shall promptly perform all design and manufacture work as necessary to conform to the government's specified performance requirements at no increase in contract price and at no cost to the government and to complete satisfactorily the specified test or demonstration at no increase in contract price.

(b) Where the specified performance requirement(s) consists of the operation of the system without designated failures for a specified period or interval, the guarantee shall, at a minimum, provide that, in the event of a failure of a weapon system or component thereof within the stipulated period to meet the designated performance requirement(s), the contractor shall promptly, at no increase in contract price and at no cost to the government, perform all work to (1) design and manufacture the system and each component thereof so as to conform to the government's specified performance requirements as specifically delineated and/or (2) repair and/or replace such parts as necessary, to meet the designated performance requirement at no increase in contract price and at no cost to the government.

6. In contracts for weapon systems, however, there are two types of guarantees: One for performance to insure conformity of design and manufacture to specifically delineated performance requirements (as set forth above); and, one for freedom from

all defects in materials and workmanship which would cause the system not to achieve the specified performance requirements. The latter is a separate and distinct guarantee provision which would attach to all delivered end items under the weapons system contract for a specified period of time. These guarantees are not mutually exclusive and both will be contained within a single contract for a weapon system or components thereof.

7. Consistent with the policy stated in DSAR 1-324, the contract may provide such additional warranty protection and remedies thereof as may be deemed appropriate by the government in the circumstances.

8. The duration of the written guarantee shall be tailored, as appropriate, to the specific contract award. The duration of the written guarantee(s) within any given contract award need not be the same for all specified performance requirements.

9. Payment for the written guarantee shall be made on a pro-rata basis at time of delivery of the contract end items covered by the guarantee.

10. During negotiation of a proposed contract, care must be taken to identify firm and/or prescribed performance requirements that have been included in the specifications and other relevant documents in order to avoid subsequent dispute. These performance requirements should be reviewed to assure that they are realistic and achievable and that the performance requirements specified in the contract accurately reflect the needs for the weapon system. Unless otherwise indicated by the government, all specified performance requirements fall under the performance guarantee(s). In the event it should be determined that a written guarantee at the weapon system level is not cost-effective or otherwise not in the interest of the national defense, the identification and examination of appropriate components of the weapon system for applicability of a written guarantee(s) is also required. This examination shold include a review of individual performance parameters (such as durability) for application of a written guarantee if comprehensive coverage is determined to be infeasible.

11. During negotiation of the contract, each circumstance(s) that could have the effect of avoiding the guarantee should be identified and specifically delineated in the contract. For example, if the guarantee would be voided, in whole or in part, by the subsequent incorporationof spare parts that were not predetermined to be a duplicate of the replaced part, this should be the subject of negotiation. Contracting officers should not agree that any circumstance(s) will void the guarantee unless the relationship between the circumstance(s) and the performance requirements is direct and the circumstance(s) identified as voiding the warranty is beyond the control of and not attributable to any fault of the contractor.

12. The firm fixed price of the guarantee(s) should be separately identified. In order to facilitate the identification of the cost of the guarantee, it shall be set forth in the contract as a separate line item.

(a) In determining whether use of a guarantee is cost effective to the government, the benefits to be derived from the guarantee must be related to the costs of the guarantee to the government. Guarantee costs arise from the contractor's charge for accepting the deferred liability created by the guarantee and from the government's administration and enforcement of the guarantee. In most cases, contractors will quote a higher price to provide the guarantee. Competition will be a major factor in the price quoted by the contractor to the government for the guarantee. In addition, the experience of the contractor in producing the item is another major factor in the cost of the guarantee since it may rely on an actuarial basis to assess financial risk. As a further consideration, the estimated cost to the government for correction or replacement by the contractor, by another source, or by the government, in the absence of a guarantee, should be compared to the guarantee costs considered above.

(b) There are other factors which must be considered in determining whether the guarantee is cost effective such as any indirect costs to the Government necessary to maintain the guarantee in effect. For example, if certain spare parts must be purchased only from designated suppliers in order to keep the guarantee in effect, the estimate of the loss to the government attributable to this limitation on competition should be estimated. By way of a second example, the effect on breakout and competitive procurement of weapon system components should be considered.

13. The waiver authority granted in Subsection 794(c) is hereby delegated to the Secretaries of the Army, Navy and Air Force and to the Directors of Defense agencies with authority to redelegate not below the level of the Vice or Assistant Commander of a Major Command or the Assistant Director of a Defense Agency. Class waivers for specific programs may be granted, where justified. Class waivers may not be approved below the level of the Assistant Secretary of the Military Department or the Director of a Defense Agency. A written record will be kept of each waiver granted, together with supporting documentation, to meet the reporting re-

quirements to the Congress. A waiver of the guarantee requirements in whole or in part set forth above must be:

(a) Supported by a written determination that the waiver is necessary in the interest of the national defense or would not be cost-effective.

(b) An intention to waiver such requirements must be forwarded to the committees on Armed Services and Appropriations of the Senate and the House of Representatives in writing, including in the notice an explanation of the reasons for the waiver(s).

(c) Notification of all class waivers will be sent to the DOD Acquisition Executive.

14. This guidance is effective immediately.

Attachment.

GUARANTEE

(a) Notwithstanding inspection and acceptance by the government of supplies furnished under this contract or any provision of this contract concerning the conclusiveness thereof, the contractor guarantees:

(1) That line item ——— and each component thereof are designed and manufactured so as to conform to the performance requirements of this contract and all other supplementary agreements relating to the production under this contract of line item ——— entered into by the United States and the contractor, and

(2) That line item ——— and each component thereof, at the time of delivery, are free from all defects in materials and workmanship which would cause the line item to fail to conform to the performance requirements of this contract and all other supplementary agreements relating to the production under this contract of line item ——— entered into by the United States and the contractor;

provided, however, that with respect to government-furnished property the contractor's guarantee shall extend only to its proper installation so as not to degrade its performance and/or reliability, unless the contractor performs some modification or other work on such property, in which case the contractor's warranty shall extend to such modification or other work.

(b) In the event of a failure of line item ——— to meet the conditions specified in subparagraphs (a)(1) or (a)(2) above:

(1) The contractor will promptly repair or replace such parts as are necessary to achieve the required performance requirements and the contractor shall bear all costs in connection therewith, or

(2) If the contractor fails to repair or replace such parts promptly, as determined by the contracting officer, the contractor will pay the costs incurred by the government in procuring such parts from another source and in accomplishing the repair.

(c) The contractor will also prepare and furnish to the government data and reports applicable to any correction required under this clause (including revision and updating of all affected data called for under this contract) at no increase in contract price or cost to the government.

(d) When items covered under the guarantee are returned to the contractor, in pursuance to this clause, the contractor will bear the transportation costs from the place of delivery specified in the contract (irrespective of the f.o.b. point or point of acceptance) to the contractor's plant and return.

(e) If the government determines that it does not require repair or replacement of defective or nonconforming supplies, the government shall be entitled to an equitable adjustment in the price of such supplies.

(f) The contractor shall be notified in writing of any failure of line item ——— or any component thereof subject to the guarantee set forth in paragraph (a) above within ——— days after discovery of the failure. Upon election by the government of a remedy in accordance with paragraph (b) or (c) above, the contractor will, notwithstanding any disagreement regarding the guarantee, comply with such direction. In the event it is later determined that the failure was not subject to the guarantee set forth in paragraph (a) above, the contract price will be equitably adjusted.

(g) The guarantee provisions of this clause do not apply to combat damage.

(h) For purposes of this clause, the term "performance requirements" means only those performance characteristics that are mandatory. The term "performance requirements" does not include performance characteristics that are described as goals or objectives.

(i) The rights and remedies of the Government provided in this clause are in addition to, and do not limit, any rights the government may have under any other clause of the contract. Disputes arising under this clause will be resolved in accordance with the clause of this contract entitled Disputes.

36-617 O - 84 - 11

JERED BROWN BROTHERS INC.,
Birmingham, MI, October 12, 1982.

Re 1982 SNAME Spring Meeting.

Capt. HENRY P. RUMBLE,
University of California, Marine Physical Laboratory,
Scripps Institute of Oceanography, San Diego, CA.

DEAR CAPTAIN RUMBLE: As you requested, this letter is to formalize my comments to the 1982 Spring Meetings Paper No. 11, "Fleet Maintenance in the Pacific", given by Rear Admiral William C. Wyatt on Thursday, April 22, 1982.

In his excellent presentation, Admiral Wyatt expressed both concern and displeasure at the quality of equipment often received from spare parts sources supporting fleet repair and maintenance. The discussion following the paper on this point led me to express experiences which we have had in meeting requests from the Navy for spare parts for the deck machinery and steering gear types of equipment which Jered supplies to the fleet. We have supplied the Navy for years and recently ceased to meet the criteria of a small business and so we have had the opportunity to see what happens because of the Navy's practice both with respect to small business 'set-asides' and buying at the minimum cost.

Typically, we will receive an inquiry to supply spares for a piece of equipment of which we were the original manufacturer. If we received the order, we would obviously know and follow the required specifications for quality of material and manufacture. If the inquiry is a small business 'set-aside' we notify the Navy that we are not a small business and proceed to quote. Within a few weeks we typically receive requests from a number of small business "garage shops" who have been asked to supply the same spare or repair parts to the Navy. They contact us because our FSCM code is given in the Navy's request. Upon receipt of our price and delivery schedules these "garage shops" often never respond further. The result is that parts may be and often are supplied which are dimensionally correct, but without assurance that the right material properties exist or that the right welding/manufacturing criteria have been used. We know that this results in material supplied to the Navy which may fail in service or prove defective in other ways, because when we have gone aboard ships to perform service, warranty or survey work, we see these parts and we see the conditions which have resulted from their installation.

It seems to me that the practice of giving privilege to small business or lowest price vendors without adequately qualifying the vendor is a major source of the difficulty the Navy is experiencing with the quality of spare parts which they receive. One of the more disturbing aspects of this problem is that when we have expressed concern at the various naval supply depots, we have learned that it is quite within the authority of the buyer to simply remove the small business 'set-aside' without verification of the basis for doing so except that a vendor, in this case Jered, has complained.

I recognize the restraints placed upon Navy purchasing practices by regulation and law, but in many cases I think the letter of the law is being followed while violating the spirit and intent of the law. The result is that a Navy buyer can purchase, at the lowest price and fastest delivery, a piece of material which will inevitably fail when placed in service. The Navy must either institute a Receiving Inspection program to assure the quality of received parts, or they must carefully examine the planned use of specific spare parts and exempt those which are critical from the standard buying practices if the problems which Admiral Wyatt referred to are to be lessened. I recognize that this is only one of many causes of the problems of fleet maintenance, but it is one which we seem to have continuing experience with and which can effectively act as a beginning for improving the quality of spare parts stores.

Thank you for the opportunity to express myself. If I can be of further help, please call on me.

Very truly yours,

RICHARD W. GLENN, *President and CEO.*

UNITED STATES
BUSINESS AND INDUSTRIAL COUNCIL,
Washington, DC, February 1, 1984.

OFFICE OF THE DEPUTY UNDER SECRETARY FOR RESEARCH AND ENGINEERING (ACQUISITION MANAGEMENT)
Department of Defense, The Pentagon, Washington, DC.

DEAR SIRS: With respect to your notice in Federal Register/Vol. 49, No. 14/Friday, January 20, 1984 pertaining to the requirement under Section 794 of the Department of Defense Appropriations Act, 1984, we submit the following comments:

Sec. 794(c) of the 1984 Department of Defense Appropriations Act authorizes the Secretary of Defense to waive the requirement under subsection (a) that contractors provide the United States with written guarantees if under subsection (c)(1) he "determines that the waiver is necessary in the interest of the national defense or would not be cost-effective; and (2) notifies the Committees on Armed Services and Appropriations of the Senate and the House of Representatives in writing of his intention to waive such requirements with respect to such weapon system, (as described in subsection (a)) and includes in the notice an explanation of the reasons for the waiver.

Number 13 of DOD's Policy Guidance proliferates Sec. 794 (c)'s authority to waive the requirement under subsection (a) beyond that delegated by the Congress of the United States exclusviely to the Secretary of Defense. In providing for a waiver of guarantees to the United States, Congress did not intend to grant authority to exercise such a waiver to an unspecified number of individuals as described in Number 13 in part as the Secretaries of the Army, Navy, and Air Force, as well as to the Directors of Defense Agencies with "authority to redelegate not below the level of the Vice or assistant Commander of a Major command or the Assistant Director of a Defense Agency." Nor did Congress intend that "Class waivers" be granted under Sec. 794(c). Such extensive proliferation of authority to waive requirements of written guarantees defined in subsection (a) would completely frustrate the will of Congress and contravene the findings of the Appropriations Committees of the Senate and House of Representatives. It would be an impermissible delegation of the authority granted to the Department of Defense by Congress.

As a practical matter, the scope of waiver authority described in Number 13 would make it impossible for Congress to exercise its oversight responsibility under the 1984 Defense Appropriations Act for two reasons: (1) Congress would be inundated with individual and class waiver notifications each presenting novel elements as justification for waiver. This would effectively sabotage Congress' determination to attach subsection (a) guarantees under the Act; and (2) Congress would be unable to effectively identify how and by whom waiver decisions were made in the overriding interest of "cost effectiveness" as described in Number 13, section (a).

Furthermore, Number 13 fails to indicate by what criteria the Secretary of Defense will determine whether subsection (a) guarantees to the United States be waived because it is "in the interest of the national defense or would not be cost-effective" as authorized in Section 794(C)(1) of the Act.

Number 1, Definitions, (b) of the Policy Guidance states that spare parts, *per se,* are not deemed to be components. Is this an averment by the Department of the Defense that spare parts will not be warranteed as prescribed under Section 794(1): ". . . That the system and each component thereof were designed and manufactured. . . .?" The language of Section 794 that *spare parts are parts of a system or a component and must therefore be warranteed in the same way that whole weapons systems must be warranteed* is unambiguous. (Emphasis added.)

Number 11 of the Policy Guidance suggests that a warranty is voided in whole or in aprt by incorporation of compatible spare parts, but not the manufacturers' spare parts. Why buy compatible spare parts at all?

Number 12(b) of the Policy Guidance implies that there will be an increase in costs for spare parts attributable to limitation of competition imposed by a warranty on the system or component. Such an implication is unfounded. The reverse is true. The costs of spare parts for a warranteed system or component competitively procured will decrease.

Sincerely yours,

GREGORY N. JONSSON,
Vice President, Government Affairs and General Counsel.

JERED BROWN BROTHERS INC.
Troy, MI, February 3, 1984.

Re proposed guidance to implement section 794 of DOD Appropriations Act, 1984 (Pub. L. 98-212).

Hon. MARY ANN GILLEECE,
Deputy Undersecretary of Defense for Research and Engineering (Acquisition Management), The Pentagon, Washington, DC.

DEAR MADAM SECRETARY: As reported in the Federal Register/Vol. 49, No. 14/ Friday, January 20, 1984, pages 2502-2506, the proposed guidelines lead me to the following comments:

(1) I believe the last sentence of the supplementary information to be in error when it states that risks will be assumed by prime and subcontractors and vendors. Traditional business practice is to cover such risks by increased pricing for either purchased or self-insurance against possible claims. Since this practice will undoubtedly continue if Sec. 794 is implemented, the risk will be passed on to the ultimate customer, the U.S. taxpayer, who will pay through increased costs whether there is ever a claim or not.

(2) As a business man, I support the concept of fair value for fair price. Therefore, I support what I see as the fundamental intent of Section 794—i.e., to assure a quality product for a quality price. I believe that a manufacturer should bear the cost of overcoming difficulties that were caused by poor performance on his end. I believe that Section 794 is flawed in achieving this for at least two reasons, and the flaws are evident in Sec. 794, para (a), (3)(A) and (B) and further evident in the Policy Guidance paragraphs 5(a), 8, 11, 12(b), 14(1), 14(2)(b), (d), (f).

(a) Simply stated the first flaw is a failure to recognize that a manufacturer's product often is not actually used for many months after it was delivered and has been modified, "cannibalized," or otherwise tampered with by service personnel during that period without any traceable record of these modifications. I have attached comments which I made in 1982 in response to a presentation by Rear Admiral William C. Wyatt which amplify this point. What Section 794 needs is some terms or procedures which permit consideration of actual cause of failure with an appeal process. This should be designed in such a way that manufacturers are held responsible to make good when failures are caused by their work (or lack of), but not when failure are caused by actions taken (or not taken) without their knowledge or concurrence which modify the manufacturer's product, its required maintenance, or its intended use.

(b) The second flaw has to do with the passage of time. What is needed here is some statute of limitations concept which recognizes the long period of time during which the manufacturer must provide the desired result, but which also terminates this expectation when sufficient time or service duty has elapsed that reasonable and knowledgeable people would agree the expected life of the technology or the material should have expired.

Thank you for the opportunity to comment. I offer my services and those of my organization should you desire further input on this matter.

Sincerely yours,

RICHARD W. GLENN, *President and CEO.*

TODD SHIPYARDS CORP.,
New York, NY, February 3, 1984.

DEPUTY UNDER SECRETARY OF DEFENSE RESEARCH AND ENGINEERING (ACQUISITION MANAGEMENT)
The Pentagon, Washington, DC.

DEAR SIRS: This letter offers comments on the "Draft Guidance on Written Guarantees" published in the Federal Register of 20 January 1984.

Todd considers the DOD proposal not only ill-advised but probably more costly to the government in the long run. Todd wishes to make the following points with regard to the proposed warranty coverage:

1. The added risks the contractor is being asked to assume are indeterminate. It is ridiculous to ask the contractor for a special line item price for this added risk. If there are several offerors, the price for this item will be wildly variable.

2. The long term increased costs associated with the proposed warranty provision could be substantial. It must be remembered that in the past where performance problems arose, the government was in a position to make an objection trade-off with respect to accepting some performance deficits if it didn't make economic sense to strictly enforce the requirements as called out where the government carried

their responsibility. By shifting the responsibility for design, it is likely that the government's objectivity will be impacted, and strict compliance will be required where it doesn't make economic sense. Ultimately prices will increase to reflect such actions. Additionally, the added bureaucracy to more closely monitor and enforce compliance with these warranty provisions will be a substantial added cost in itself.

3. Making the costs of repairing defective workmanship and/or materials and the cost of remedying performance deficiencies unallowable is an additional burden on incentive contracts; one that is likely to lead to higher prices at the outset.

While Todd is vigorously opposed to the proposed warranty provisions, it has the following recommendations should these provisions survive in their current form:

(a) Extend the Government Furnished Equipment exclusion from the contractor warranty to include Government Furnished Design and Information.

(b) If the risks represented by the extended warranty are insurable, make the cost of such insurance allowable. This is fair and also provides a meaningful price for providing the proposed warranty coverage.

Very truly yours,

HANS K. SCHAEFER.

FMC CORP.,
San Jose, CA, February 8, 1984.

Subject: FY84 DOD Appropriation Act—Guarantee Provisions (Sec. 794).

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING (ACQUISITION MANAGEMENT)
The Pentagon, Washington, DC.

GENTLEMEN: We are pleased to respond to the Department of Defense with our comments on the proposed guidelines to implement the requirements of Section 794 of the 1984 DOD Appropriations Act. The guarantee provisions are expected to have a significant impact on the defense acquisition community.

Both DOD and defense contractors must be concerned about the vagueness of the scope of the guarantee requirements. Although the DOD proposed guidelines address this issue and define several terms, certain of the definitions require further clarification. Furthermore, other key terms were left undefined. Contractors who must price extensive guarantees will be considering undefined risks; projected costs will increase accordingly.

The guarantee of performance requirements is expected to have an adverse impact on competition as well as costs. In particular, expecting a guarantee of the design when the Government owns the design and has the freedom to make unilateral changes is unrealistic. The guidelines, however, do not address this basic issue. The guidelines should also go further in addressing the effects of the DOD spare parts "break-out" program on the extent of the contractor's responsibility.

Another major issue left unresolved by the proposed guidelines is the determination of claims under the guarantees. The use of spare parts from other contractors, the adequacy of maintenance and records concerning maintenance, and the verification that work actually falls within the scope of the guarantee are areas which would benefit from DOD guidelines.

We believe the DOD regulation to implement the guarantee provisions of the subject Act is a helpful beginning. However, these and other factors must be considered in implementing Section 794. We enclose our comments on the proposed guidelines.

Very truly yours,

ROBERT N. BURT,
Vice President and Group Manager, Defense Equipment Group.

[Attachments.]

FMC CORPORATION COMMENTS ON DOD'S PROPOSED GUIDANCE ON GUARANTEES
SUMMARY

I. Clarification of Scope:

A. Weapon system: broadly defined;

B. Production: never defined; suggest making explicit difference between production and development;

C. Components: insufficient detail; ambiguity re spare parts;

D. Contract award: without further clarification potential exists for great inequities; guidelines expand scope of act;

E. FMS: not mentioned but useful to provide clarification that FMS not covered by the act;

F. Remedies: guidelines go beyond act's requirements.

II. Performance Guarantees:

A. Design guarantee requirement: guideline do not address government furnished specifications:

1. Likely to reduce competition;
2. Likely to increase costs;
3. Third party liability may be affected; issue not addressed by guidelines.

B. Government ordered changes impact extent of guarantee responsibilities.

III. Contractor and Government Responsibilities:

A. Negotiation of the guarantee provision:

1. Reasonable limitation on scope of warranty;
2. Spare parts "break out" policy;
3. Difficulties in competitively bid procurements.

B. Administration of guarantee claims not specifically considered; a source of additional costs.

Comments on DOD's Proposed Guidance on Guarantees

The Department of Defense has published proposed guidelines intended to implement Section 794 of the 1984 DOD Appropriations Act. FMC Corporation has reviewed the Act and the proposed guidelines and compiled these comments.

CLARIFICATION OF SCOPE

The Act itself does not define the key terms which will affect the scope of the requirements for a guarantee. The guidelines attempt to clarify these terms and reduce the uncertainty engendered by the vagueness of the statute. However, certain terms are left undefined or rather ambiguous. First, for example, the guarantee requirements relate to "weapon systems." The phrase was not defined in the statute; DOD, however, has not only defined the term but has done so most broadly. It appears that under the proposed guidelines the guarantee will be required for both active and passive weapon systems as well as for all components, parts, subsystems and computer support; the only exception may be spare parts.

Second, the guidelines do not define "production." In fact, the guidelines define "procurement" with a reference to "production." Although it is implicit in both the law and the DOD guidelines that performance guarantees will be required to be incorporated into contracts providing for production of weapon systems as opposed to development of the systems, the guidelines should be made explicit on this point. The danger of a misinterpretation of the Act's clear and logical intent of the Act which extends its provisions to development activity is either an undeserved risk on design innovation or a restriction to weapon systems which fail to stretch the state of the art. Therefore, we recommend that DOD regulations explicitly define the term "production contracts" to exclude contracts for development of such equipment from the guarantee coverage requirements.

Further, we do not believe that the law should require guarantees under cost-reimbursement contracts for production of weapons systems. The introduction of a requirement for guarantees under cost-reimbursement production contracts represents a basic change in defense acquisition. Ordinarily, a cost-type contract is used when the Government is trying to determine whether a weapon system being developed will meet certain performance requirements. The use of such a contract is therefore a recognition by both parties to the contract that achievement of the performance requirements cannot be guaranteed. To require the contractor to establish a fixed price to be paid for all repairs, replacement work, and for any additional developmental work he may have to perform to meet the potentially impossible performance requirements increases the risks under a cost-type contract astronomically and is most inequitable. Thus, we believe that the regulations should recognize the greater likelihood that a firm fixed price line item covering such guarantees will not be cost effective in many cost-reimbursement production contracts.

DAR 3-808, governing the "weighted guidelines" approach to the negotiation of profit, presently establishes a "cost risk" factor of from 0% to 3% for cost-type contracts. The application of the guarantee requirement may well result in cost risks under cost-type contracts even greater than the cost risks under fixed price contracts, since less will be known at that phase of the program about the ability of the system to meet the performance requirements. If the guarantee requirement under cost-type contracts remains in effect, DAR 3-808 should certainly be revised.

Third, in day-to-day operations under the regulations, questions will undoubtedly arise as to whether particular items are components. The guidelines define components but do not address the issue of "nuts and bolts" types of components. Al-

though such items do not appear to be components within the reach of the Act, the prime contractor is given no guidance in his dealings with subcontractors and vendors. It appears each and every contract will have to identify the "components" being furnished thereunder that are subject to the guarantee requirement.

Furthermore, many production contracts and basic ordering agreements now permit Contracting Officers unilaterally to issue orders for spares/components. Contractors may believe it necessary to provide in the future that all orders shall be bilateral and fully priced in order to maintain some control over the items as to which they must provide guarantees.

Fourth, the guidelines apply to every "contract award" following March 14, 1984. The parameters of "contract award," however, include provisions which may result in inequitable treatment of contractors. DoD's draft guidance provides that "(a) a modification to a contract to add additional quantities constitutes a contract award" (and hence is subject to the guarantee), and "(b) the exercise of a priced production option even where no further definition or negotiation of terms is required constitutes a contract award." This could be interpreted to mean that a contractor will not even be afforded an increase in his unit price to reflect the costs which will result from a guarantee for increased requirements that were not contemplated at the time the price was negotiated; if so, the provisions are unconscionable. We recommend that paragraph (a) be amended to specifically state that increases in quantity will be effected through the use of bilateral modifications (which will give the contractor an opportunity to price in a factor for guarantees) and that paragraph (b) be amended to provide that if a guarantee was not included in the price previously established for the priced option item, the contractor shall be entitled to an equitable adjustment to reflect the effect of the guarantee requirement.

Fifth, it is assumed the guarantee requirement does not apply to FMS acquisitions because DoD appropriated funds are not used. However, this should be stated explicitly in the regulations.

PERFORMANCE GUARANTEES

Another major area of concern is the requirement that a contractor guarantee that the weapon system was designed and manufactured so as to meet performance requirements. A blanket application of this provision will clearly result in either reduced competition or the realization that such guarantees cannot be cost effective in many situations.

The requirement that a contractor guarantee that a weapon system and/or each component thereof were designed and manufactured so as to conform to the performance requirements specified in a production contract appears to have been based on an assumption that a contractor has been the sole designer of the system and/or component and will be the sole producer of the equipment. However, the design of every weapon system is to a large extent dictated by DoD and is subject to changes at the will of DoD. Further, it is the goal of Congress and of DoD to award contracts competitively wherever practicable. Requiring a guarantee of the design undermines that goal bacause contractors who have not been involved in the design cannot reasonably be expected to guarantee a design for which they have no responsibility.

The requirement fails to recognize that boards of contract appeals and courts have previously held that if there is not a disclaimer in the contract the Government warrants that fabrication of a system/component in accordance with the data package it presents to an offeror will result in a system/component that meets the performance requirements. Is it the intent of the new law to turn this around; and the contractor will become the guarantor of the design—even where he played no part in the design?

Neither the Act nor the guidelines address the issue of liability for third party claims which may be engendered by the guarantee provision. For example, a defense to product liability cases brought by sevicemen injured by products produced by defense contractors also recognizes the government's responsibility for the specifications it provides. This so-called "Government contract defense" provides, generally, that if a contractor follows specifications established by the Government, the contractor is not liable to a party injured by design defects in the product. This protection may be lost because of the new guarantee-of-design requirement. Therefore, the fixed price for the guarantee must be increased to cover this potential liability.

The guidelines do not address this issue. To reduce somewhat the risk for an offeror who is not the designer of a system/component, the regulations should, at a minimum, prohibit the establishment in RFP's/IFB's performance requirements which have not been proven to have been met during the development of the

system/components. Even then, a guarantee of design by parties who were not connected with the design effort are unlikely to be cost-effective.

Similar concerns are raised by the lack of direction as to government furnished property. The Government has extensive input into design in development type contracts and then becomes the owner of the technical data package. Guarantees must take into account the government ownership of the design as well as the effect of the changes clause. Under the "Changes" clause the Government can unilaterally change the drawings, designs, or specifications for a weapon system/component after the contract has been signed. In some instances, it may be difficult or impossible to determine whether the equipment, as changed, will meet guaranteed performance requirements. At a minimum, such changes may require the repetition of the kind of testing that was performed under the development contract. The guidelines must recognize the more likely possibility that contractors will seek to cut off any guarantee liability at the point where any change is incorporated into the contract. The regulation should consider the effect of a change on guarantees and on any line item price established for guarantees.

The guarantee is limited to "specifically delineated performance requirements." Obviously, determination of what constitutes performance requirements is the most important initial step in formulating the guarantee. The DoD guidelines recognize that flexibility and negotiation will be necessary at this point. However, the guidelines should specifically address the problems of contracts in which the performance requirements are developed as production and development continue. One approach in such situations would be to agree to leave the guarantee and specific performance requirements to be negotiated at a later date.

RESPONSIBILITIES OF THE CONTRACTOR AND THE GOVERNMENT

Although several paragraphs of the draft guidance deal with tailoring of guarantee clauses to the requirements of specific contracts to limit the coverage afforded by such clauses, we believe greater emphasis must be given to this aspect of the matter. It should be made clear that contracting officers, in the interests of equity and cost-effectiveness, can limit any part of the guarantee requirements, including reducing the scope of, or waiving, guarantees of performance requirements—particularly in build-to-print situations. Further, in establishing a guarantee requirement, consideration should be given to the nature of the equipment being acquired, its stage of development, the effect of a guarantee on competition, and the cost of administration of warranty claims to both the government and the contractor.

Warranties traditionally available in ordinary commercial situations have specific requirements incorporated. For example, an automobile owner may have to demonstrate that servicing was performed at necessary intervals by authorized dealers. Similarly, a contractor, in order to reasonably price its guarantee must be able to establish servicing and replacement part standards. Thus, the Government may be in a position of receiving a guarantee conditioned on the use of designated suppliers of spare parts. The reduction in competition that would result conflicts with a policy of encouraging competition. The guidelines do not resolve the dichotomy between DoD's spare parts "break-out" program and the guarantee of systems and components produced by a specific contractor.

While DoD's draft guidance includes a model clause for use in contracts for less complex weapons systems, no clause is proposed for complex systems. Inasmuch as all offerors must bid on the same requirements in competitive acquisitions, RFP's and IFB's will have to include specific guarantee language. Therefore, a model clause for complex systems should be included in the regulations for the guidance of all purchasing offices.

As the regulations recognize, the guarantee requirements will, despite the model clause, be the subject of negotiations prior to agreement on a contract. One method to increase the efficiency of the procurement system would be to provide for the issuance of draft RFP's/IFB's for every solicitation which will include a guarantee and require that potential offerors' inputs concerning the proposed guarantee clause set forth in the draft RFP/IFB be given consideration in the preparation of the formal RFP/IFB.

In addition, the guidelines, as proposed, do not devote sufficient attention to the process of implementing guarantees once they have been incorporated into a contract. Both the government and the contractor will incur administrative costs to process guarantee claims. For example, it is not clear how, in a build-to-print situation, the contractor can be assured that a "component" being furnished by itself is in such condition that when used in a weapon system it will not result in a failure of the weapon system to meet performance requirements.

Furthermore, DoD's draft guidance recognizes that contractors may qualify their guarantees by requiring that spare parts must be purchased only from designated suppliers. However, it should also recognize that contractors may similarly qualify their guarantees by requiring that installation, all servicing/overhaul of the equipment, and training and certification of operators must be performed by the contractors or organizations which they designate. If guarantees are qualified in these ways, a mechanism must be established under which the contractor is assured that all conditions have been met and that the failure is due to a defect covered by the guarantee and not a result of misuse, abuse, or poor maintenance.

MASON V. HANGER-
SILAS MASON CO., INC.,
Lexington, KY, February 8, 1984.

Subject: Draft Guidance on Written Guarantees (PL98-212, Sec. 794).

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING (ACQUISITION MANAGEMENT)
The Pentagon.

GENTLEMEN: In response to the request for comments on proposed guidance to implement the subject Section 794, PL98-212, I am unable to see how the section can be applied to a contractor operator of a government-owned facility such as Mason & Hanger-Silas Mason Co., Inc. We operate the Iowa Army Ammunition Plant, Middletown, Iowa, and perform Load, Assemble and Pack (L/A/P) functions under contract to AMCCOM(R).

The nature of this type of work requires the supply of many items, most of which are government furnished, such as shell cases, high explosives, fuzes, boosters, propellant, etc., which are manufactured elsewhere and shipped to us for loading and assembly. Many of these items are manufactured in other GOCO plants. To require the final assembled product to be warranteed by us is impossible.

Our operations are controlled by government developed Technical Data Packages (TDP's) over which we have little control. Changes may be made in the TDP's at the customer's desire. Schedules are decided by others in the government leaving the efficiency of shift management, economic ordering and shut down in the hands of others. Inspection requirements are also developed by others as are the final products static or dynamic testing procedures. The dynamic tests are usually conducted by government employees at another facility.

As we are not masters of the development, design, process, inspection or testing, we could not be expected to be able to provide a warrantee for any product under these circumstances.

Thank you for the opportunity to comment.

Very truly yours,

D. ROSS DUNHAM,
Senior Vice President—Defense Activities.

RAYTHEON CO.,
Lexington, MA, February 8, 1984.

Subject: Proposed Guidance on Warranties.

Hon. MARY ANN GILLEECE,
Deputy Under Secretary of Defense, Acquisition Management,
The Pentagon, Washington, DC.

DEAR MS. GILLEECE: In response to the Department of Defense's solicitation of comments regarding the implementing guidelines for Section 794 of the FY 1984 DoD Appropriations Act, we are pleased to offer the following comments.

It is our belief that the DoD bears a responsibility to maintain the integrity of the procurement system. Over the years the body of rules governing the DoD's procurement practices has been continually revised to recognize the increasing complexities of the weapons acquisition business. This has become a finely tuned system where varying factors such as risk, reward, technical uncertainty and specified performance have been kept in balance through a variety of contractual formats.

The obligation imposed upon the DoD by Section 794 of the FY '84 Defense Appropriation Act was to insure that contractors, through the means of a guarantee, live up to their contractual commitments. There was nothing in the Act which inferred or intended that the contracting rules were to be changed. Unfortunately, in the implementing guidelines DoD has gone well beyond the requirement of the Act and

has in fact proposed instructions which could easily destroy the intent of the existing regulations which have been carefully drawn to require a balance between technical uncertainties, performance, risk acceptance and reward.

As a rather simple example, the uncertainties related to the development of a state-of-the-art piece of equipment dictate a form of contract which places most of the risk on the buyer with correspondingly lesser reward for the seller. This risk/reward parity is carried through the cycle with higher rewards tied to greater risk assumption as finality of design and evidence of producibility become more apparent. One of the major problems with both the language of Section 794 and the implementing guidelines is the failure to recognize the importance of this essential balance.

It is perhaps understandable that the subtleties of contract format eluded the Congress, but there is no such excuse for the DoD in the preparation of the implementing guidelines. We must recognize that the language of the Act cannot be changed except by the Congress; DoD, however, does have the capability to write implementing instructions which are based on a common sense interpretation of what the Congress intended without creating unnecessary problems for both the DoD and its customers.

As an example of such a problem, we need only to look at definitions (f) and (g) of the guidelines. Definition (f) defines the language of Section 794 "bear the cost of . . ." as meaning "no increase in contract price." Definition (g) gratuitously adds a definition of "at no cost to the Government," a term which never appears in the Act. This definition states that "costs will not be reimbursed to the contractor directly or indirectly . . ." Obviously the imposition of this latter language in any form of cost reimbursement contract directly violates the essential nature of the contract which provides that the contractor is only required to perform his best efforts toward the accomplishments of the requirements and bears no obligation to expend more than the funded contract amount.

What makes this requirement even more confusing is the fact that the guidelines in paragraphs 5 (a) and (b) specify these two conflicting definitions in a single sentence as the remedy for failure to meet requirements.

I have used the above example primarily to highlight what I consider to be a major deficiency in the philosophy with which the guidelines were prepared. The DoD should, above all else, protect the integrity of its own contracting procedures and be prepared to defend the logic of this position to the Congress.

Again referring to this single example solely to illustrate a principle, I believe that the DoD should request a waiver of the requirement for applicability of Section 794 to all cost based contracts. It should further remove the definition in 1(g) since the prior definition 1(f), i.e., "at no increase in contract price . . ." clearly satisfies the intent of the Act yet still permits recoupment of costs up to the ceiling in accordance with the intent of fixed price incentive contracts.

This is but a single example to illustrate what I believe should be the philosophy of the DoD in drafting the implementing guidelines, namely, to maintain the integrity of well established contracting practices, yet implement the intent of the law in those cases where the contractor has failed to meet his contractual commitments.

Enclosed is a more detailed summary of comments related to both Section 794 and the guidelines which I believe should be addressed before effective implementation can be achieved. Failure to address these and other comments which you will receive will most surely lead to a chaotic situation which will force contractors to place a high price on warranty requirements and cause even further deterioration of the defense productive base.

Again, I appreciate the opportunity to have provided these comments and would be pleased to discuss them further with you or members of your staff should you so desire.

Sincerely,

STEPHEN W. ROWEN,
Director of Government Contracts.

Enclosure.

COMMENTS ON THE DOD'S PROPOSED GUIDANCE FOR IMPLEMENTATION OF SECTION 794 OF THE FY'84 APPROPRIATIONS ACT REGARDING PERFORMANCE GUARANTEES BY CONTRACTORS

The following comments are in two parts: (a) general observations of some of the problem areas that we foresee, and (b) a specific listing of problem areas directly related to the text of the guidance paper.

A. GENERAL

The guidance paper attempts to implement the intent of Section 794 of the Act. Unfortunately Section 794 is itself not clear in several areas and by carrying forward into the guidance paper the exact language of the Act, this confusion is retained. For example:

(a) There is no clear statement that the Act intends to differentiate between development and production tasks; yet throughout the guidance paper the word "production" is used exclusively.

(b) A further confusion is introduced since the Act applies to all forms of contracts both cost based and fixed price; yet the very nature of a cost based contract anticipates problems in meeting performance requirements and specifically allows contractors to stop work at the contract ceiling unless additional funds are provided.

(c) The Act calls out application to any production contract "or any other agreement . . ." What does this mean?

(e) The Act addresses weapons systems. The guidelines attempt to define weapons systems but stop short of clarifying what is not a weapon system. For example, are communication systems weapons systems? Are noncombat transportation vehicles weapons systems? Is a one of a kind intelligence radar a weapon system?

The guidelines exempt application of the Act in situations where failure results from combat damage. This exclusion should be much broader to include all damage not under the contractor's control.

The guidelines are silent on the potential problems of systems operability in an integrated environment.

The whole concept that if a contractor is willing to guarantee performance of a commercial article he should be willing to guarantee his military product begs the question of ultimate use. The manufacturer of a commercial product can count on a reasonably predictable user environment whereas the manufacturer of a military product cannot. These uncertainties have not been considered in either the Act or the guidelines and should be.

B. SPECIFIC COMMENTS (REFERENCES ARE TO THE GOVERNMENT GUIDELINES AND CLAUSES)

1. Sec. 794—

Par. (a)(1)(B)—The words "Or in any other agreement" are very vague. The meaning is not clear as to what the other agreement might be. Could it be a development contract for example? If it is intended that this Act applies only to production items in the recognized sense, then specific exclusion for development effort should be noted. If on the other hand this term refers only to the Government's performance requirements, then there should be no agreement other than what is called for by the contract.

Par. (a)(3)(A)—The term "contractor will bear the cost of . . ." is imprecise. In the guidelines an attempt is made to differentiate between "no increase in contract price" and at "no cost to the Government" but even these two terms are confused as will be shown later.

Par. (d)—The exclusion for combat damage should be broadened to cover "any damage which is incurred outside the control of the contractor.

2. Policy Guidance—Definitions:

1(a) Should be more explicit in describing what is not covered. See general comments above.

1(b) This definition of a spare part is confusing. If a spare consisted of two or more pieces assembled together, it would be covered by the guarantee. If it were only a single piece, it would not. This will create great confusion since both types of spares will be ordered under a single contract.

1(c) The application of the guarantee to all types of contracts including CPFF is directly contrary to the basic term of cost type contracting. At what point does work under the contract cease and work under a guarantee begin?

1(d) Here again the words "in any other agreement" are confusing. This definition goes on to state that a "specified performance requirement" can be covered by any other agreement pertaining to the production of the system . . ." incorporated or referenced" in such contract. A specified performance requirement should be just that and not left to a reference to some other specification.

1(f) and (g) These two definitions are conflicting—"at no increase in contract price" permits charging to the contract up to the ceiling limits; "at no cost to the Government" would require charging off to profit. The guidelines go on in par. 5(a) and (b) to use both terms at the same time thus setting up conflicting

instructions. We believe that the single definition "at no increase in contract price" would suffice.

3 At some point the language should define what the term "production" as used herein really means. Is it different from development or is it meant to cover any finite article that is fabricated or assembled for delivery to the Government.

3(a) The term "time of delivery to the Government" is imprecise. Does this mean physical delivery outside the contractor's plant after acceptance or presentation of a product for acceptance testing.

4 The difference between more or less complex weapons systems is obscure. What is really meant?

5(a) and (b) Note conflicting language of "no increase in contract price" and "at no cost to the Government."

5(b) This language becomes redundant starting with the section identified in (1) as far down as the section identified as (2) and also the last two lines starting with "at no increase . . ." etc. to the end.

11 This section cautions the Contracting Officer against agreeing to circumstances which would void the guarantee unless the circumstance is direct. This is too stringent since once a product leaves control of a contractor he has no knowledge of how it is being handled or used. The reference to direct causal relationship should be deleted.

3. Guarantee Clause—

(a) This appears to conflict with the language of 5(a) under guidance.

(b)(2) If the contractor repairs the item under (b)(1) the costs may be charged to the contract as long as there is no increase in contract price. Under (b)(2) it would seem to preclude such charging even though the repair by the Government may be for the Government's convenience.

(c) The requirement for treatment of the cost of reports and data supporting any corrective actions should be chargeable to the contract up to the existing limitations.

(g) The exclusion of applicability of the clause to combat damage situations should be broadened to include any damage sustained beyond the control of the contractor.

TALCOTT, MCCABE & ASSOCIATES,
Washington, DC, February 8, 1984.

DEAR MADAM SECRETARY: I am compelled to respond to your request for comments on the subject of warranties and your proposed guidance for compliance with the law (Sec. 794, DOD appropriation Act, FY '84).

I have no client or business interest. My interest derives strictly from my status as a citizen and taxpayer, which I trust entitles my views to at least as much weight as those with a career personal or financial interest. I shall leave the technical and legal comments to the technicians and lawyers. Other considerations may be just as important to your decisions.

First, I urge your conscientious implementation of the law to be founded upon the public and national security interest rather than the convenience of procurement officers or the profit of suppliers. I urge you to think first of the combat personnel who will be commanded to use the procurements in real batttle; next, their families; next, the taxpayer; next, the supplier; and next, the procurement official (who is a fiduciary for the others). I urge you to ask each person involved in the procurement process if he would be satisfied if his son's life would depend upon the weapon hitting its intended target before he is hit. I urge you to assume that not only his life, but our national security and treasure hangs in the balance. Few other government decisions are as critical in amount or the standard of performance required.

Warranties work. They are an effective, efficient system for obtaining quality products at reasonable costs. Warranties assure performance, and facilitate administration, or procurements. Other benefits accrue also.

The DOD should be carrying out the policies and promises of the President pursuant to the law—not the past practices of the Department. DOD is not an "independent agency"; it is a Department of the (Reagan) Administration.

The DOD bureaucracy should be helping the Administration to "look good", assisting it to perform better, and improving all systems and practices. Hanging onto obsolete procurement practices, accommodating friendly suppliers, tolerating weapons systems that fail to perform as required, reluctance to install proved industrial procurement systems and failure to appreciate the positive political factors do serious harm to the Administration, our national security and combat morale.

The bureaucracy must understand and respond to the intent of this law. All regulations and "guidance" should be designed to carry out that intent—to make warranties work, to improve quality, to encourage competition, assure availability and to reduce costs of all procurements (weapons, components parts).

Warranties are effective in improving quality, increasing competition and reducing costs—all promises and objectives of this Administration. And "it's the law." DOD should be asserting every effort to make warranties work, not to frustrate their implementation or to impede their operation.

Warranties are popular in the private sector. Private sector consumers demand warranties and private sector providers are eager to offer better and better warranties to earn initial sales and repeat business. Military providers will be more eager when they understand that performance warranties are strictly required and are bona fide criteria for procurement contracts. Only producers of inferior products are unwilling to offer warranties. Few private consumers can afford to purchase unwarranted products. Warranties are voluntary offered by quality suppliers who truly want their products to work.

The voters understand warranties, know they will work and will not tolerate Administrations which do not demand them. This is another reason why the Andrews (R-ND) amendment passed so easily even against heavy clandestine opposition lobbying by big entrenced suppliers. Few Congressmen can vote against warranties because they know their value and validity. Failing to use warranties is perceived by them as purely and simply a waste of money, acceptance of inferior products and unseemly favoritism toward low quality producers. Congressmen and citizens will understand and insist on warranties. The DOD bureaucracy should develop guidance that is congenial with the President's policies, the intent of the law and the desires of the Congress and the citizen voter—taxpayer.

The proposed guidance confirms the clear implication that DOD continues, for its own peculiar reasons, to oppose warranties.

The proposed guidance reflects an admission of DOD incompetence in industrial procurement techniques, a lack of experience in the arena of competitive warranties, a failure to understand the broad efficacy of warranties or a concession to the status quo of procurement dictated by the entrenched suppliers and manufacturers.

The Secretary should not fear staff incompetence or lack of experience in the administration of warranties. The Secretary should not accept advice from DOD bureaucrats who have consistently opposed warranties. She should employ bureaucrats who are pledged to make warranties work. A warranty system could make heroes of the procurement staff rather than threaten their careers or jeopardize their past or prospective relationships with the suppliers.

The guidance wrongly implies that warranties will cost more by providing that "the firm fixed price of the guarantee" should be "separately identified" as a "separate line item." There should be no extra cost for any warranty. No such extra charge is identified in private sector warranties. Imagine what a private customer would think if he were charged extra for a warranty. He would immediately (and quite properly) suspect an inferior product and would promptly look for another supplier. DOD should do the same. This portion of the guidance can only be intended to frustrate or subvert the law.

In most cases, contractors will not quote a higher price to provide a guarantee. There is no record or evidence of such behavior. The opposite is more likely to be true. Please review the recent GE contracts for jet engines. During the next round of bidding for jet airplane engines, the price will be lower and the warranties tendered by the competing bidders will be more favorable. Only a monopoly supplier of a needed commodity will quote a higher price for a guarantee. A supplier in any other circumstance would be admitting that his product could not measure up or he would be signalling serious problems which should be carefully scrutinized or avoided by selecting another supplier who could deliver and would stand by his product and warranty.

Every warranty should be cost effective. There should be no indirect costs to the government. There is no need to provide guidance for higher quotes or higher costs to the government. Warranties provide cost savings as well as more reliable equipment. A well drafted and administered specific warranty is a universally recognized method or technique for providing reliable products at fair and reasonable prices for a minimum administrative cost for both parties. Warranties require both parties to perform competently and cost effectively. The nature of a warranty is to leverage quality, cost and competence in the desired directions. The government should require exactly the performance requirements it needs. The supplier should guarantee that his product will meet or exceed the performance requirements. Whichever party fails should be accountable without excuses.

The DOD should be leading the Services in implementing the warrantly law, but it is lagging far behind. Already the Air Force and the Navy have benefited enormously from warranties—almost gratuitously offered by suppliers to meet competition.

The intent of the law was clearly to include spare parts. There is absolutely no reason to exclude spare parts from warranties. The combat soldier wants the spare parts to function just as well as the original parts. The taxpayer wants them to work properly when delivered without additional cost. both the combat soldier and the taxpayer expect original and spare parts to work with no ifs, ands, buts or excuses. DOD should expect no less. Buying spare parts without specific firm warranties is tantamount to fraud, waste and mismanagement—which this Administration has properly promised and sworn to abate.

Whenever a contractor or supplier is unwilling to provide a specific, firm warranty of performance of his product (and accept all financial responsibility and accountability for failures to strictly perform) he should not be given a contract. His product is certain to not measure up to our Nation's (or this Administration's) responsibility to our combat personnel or taxpayers. If no supplier can meet the warranty criteria, then the specifications and warranty requirements may be unrealistic and unattainable. If such is the case it is extremely important for DOD to know immediately (rather than waste years before discovering that the weapon cannot perform). Early discovery that warranty performance is impossible will allow specifications and the DOD planners an essential opportunity to revise their total integrated battle plans, if necessary. Wasting years in frustrating delays caused by faulty performance of weapons systems (the present common experience) can be alleviated by a firm comprehensive warranty system strictly and competently administered.

In this and previous Administrations, performance failures in weapons systems were excused. No one was held accountable. Billions of taxpayer dollars were expended to correct errors and deficiencies. In practice, performance failures were almost as profitable as successes—for the suppliers.

This Administration promised, and is expected, to reverse this condition. DOD should be taking the initiative and leading the way. DOD should be insisting upon more stringent warranties applying to more equipment and weapn procurements. It should be enforcing warranties more strenuously. It should be asking the Congress for more warranty authority, not waiting for the Congress to impose warranties as a means of forcing "trigger readiness." DOD should be the enthusiastic leader, not a reluctant follower.

DOD should be searching for new systems (management and procurement as well as weapons) for improving its combat readiness. It should voluntarily adapt proved industrial systems from the private sector as rapidly as possible. Private sector procurement procedures are designed to assure required performance—otherwise businesses would "go broke." Warranties are only one function that have proved beneficial to the private sector procurer and supplier. Neither Greyhound, Northwest Airlines nor Safeway could survive a month with an "equipment failure" or a "down time" record of DOD. They insist on warranties; moreover, their suppliers offer competitive warranties. DOD performance requirements are no more strict or stringent than for the private sector. But the need for military warranties is even greater because combat morale, national security and other peoples' money and lives are (uniquely) at stake in DOD procurement.

In past Administrations, financial responsibility for correcting errors or fixing deficiencies was generally borne by the government. There was little inducement, and no requirement, for suppliers to guarantee trigger ready reliable equipment or weapons upon delivery. Additional payments were always available for "change orders" or expensive "spare parts"—or graveyards, dumps and supply depots for obsolete or inoperable equipment and weapons.

DOD officials should not be so fearful. Warranties will force the bureaucrats to perform better.

Accepting a lowest bid can incur devastating results— especially when lives, national security and treasure are in the balance. But accepting the lowest bid without a warranty is almost certain disaster. Accepting lowest bids with timid, lax or incompetent warranty administration would frighten combat personnel and disgust taxpayers. DOD has a fiduciary responsibility to safeguard both groups and your Commander-in-Chief.

It is true that DOD procurement personnel will be required to perform better under a warranty system. Plans, specifications and warranties must be precise and clear as well as stringent and appropriate. Enforcement must be strict, fair and courageous. The Secretary should welcome and advocate such developments. When suppliers understand and are convinced that the Administration is serious, they will

respond with quality, reliable equipment at fair, reasonable, competitive prices. More interest will develop among more suppliers.

The DOD now has an opportunity which it should not resist. It should grab the ball handed to it by the Congress and carry it forward. Every interested party—combat personnel, taxpayer and conscientious supplier will applaud. You will be complying with the law and serving the Administration well, which I assume is the main reason you hold the position of Deputy Under Secretary for Acquisition.

I offer these comments in a constructive vein as a friend of the Administration and as a citizen who is primarily concerned with the safety of our combat personnel and unnecessary burdens on taxpayers.

Sincerely,

BURT L. TALCOTT.

GRUMMAN AEROSPACE CORP.,
Bethpage, NY, February 10, 1984.

From: Grumman Aerospace Corporation.
To: The Honorable Mary Ann Gilleece, Deputy Under Secretary of Defense (Acquisition Management), the Pentagon, Washington, D.C. 20301
Subject: Comments On The Proposed Guidance On Implementation Of Section 794 Of Public Law 98-212—Weapon Systems Guarantees.

It is this defense contractor's carefully considered opinion that the proposed Guidance on implementation of Section 794, if implemented in its present form, will destroy the fundamental principles for use of contract types ennunciated at DAR 3, Part 5, which comprise the very core of the business relationship established over many decades between the government—the buyer of an infinite variety of products—and the seller—the designer, developer and/or producer of these products. This is true because of the inherent inability at the outset to establish with any degree of certainty the contract amount for the design, development and production of complex weapon systems exploiting the latest technological advances so as to be superior to any adversary. Both the Legislative and Executive branches of Government have long recognized this fact by making provision in statute and regulation for acquisition by the cost reimbursement method. Thus, the guidance's application of Section 794 of the law to all weapons system acquisition contracts rather than only to those utilizing procurement appropriations, clearly the intent of the Section, is unnecessarily overreaching and if implemented will introduce chaos into this monopsonistic marketplace. If this is done, a best efforts cost reimbursement type contract, utilized by the parties because it best shares the risks of the undertaking becomes a firm fixed price defaultable contract with the original seller paying all costs of reprocurement even of unachievable performance requirements.

The law in the first sentence speaks of ". . . none of the funds appropriated by this or any other Act may be obligated or expended for the procurement of a weapon system. . ." and in subsections 1 and 2 states ". . . (A) in the production contract, or (B) in any other agreement relating to the production of such systems . . ." (Underscoring added). Thus, research and development and operation and maintenance appropriation funds for example, are exempt. The guidance should explicitly state that contracts funded from other than procurement appropriations are exempt from Section 794 Guarantees rather than as presently making it applicable to all weapon system acquisitions. Furthermore, the guidance should premanently waive the applicability of Section 794 to acquisition contracts utilizing procurement appropriations that because of the risks involved are dependent in any way on incurred costs for seller reimbursement. In both cases DAR 1-324 should be addressed for appropriate warranty coverage.

The comments following are presented in the general order of their first appearance in the guidance.

The definition of a "weapon system" is overly broad in that it includes (1) torpedoes, ordnance and bombs, which are components of, rather than weapon systems and (2) items not part of a weapon system but rather entirely ancillary thereto such as related support equipment, training devices, test equipment and their accessories. The definition should be clearly limited to a weapon system. Similarly the definition of component should not include maintenance or rebuild as these activities are not ". . . production of a weapon system . . .". A clearer definition of component would be as follows:

"A component is an assembly or any combination of parts, subassemblies and assemblies mounted together in the manufacture or assembly of either the weapon system, per se, or like items including contractual end items acquired by the govern-

ment from other than the prime weapon system contractor for the latter's installation on or incorporation in the weapon system during manufacture."

Since the law imposes such a change in procurement policy "specified performance requirement(s)" that are being guaranteed should be clearly expressed in a Special Provision of the Contract Schedule. This will permit examination by both parties of the realism, achievability, necessity and cost of the specified performance requirement(s). Paragraph (h) of the Guarantee clause should state only "(h) For purposes of this clause, the term "performance requirements" means only those performance characteristics that are delineated in the Schedule of the Contract and thus are mandatory."

If the guidance intends application of the guarantee to contract(s) coming into existence by the exercise of option(s) priced prior to the guarantee requirement without the ability to reprice accordingly, it is clearly incorrect. This comment applies equally to the definitization of a letter contract where the negotiated price to be definitized was not predicated upon the inclusion of the guarantee.

Period of Guarantee For Material and Workmanship—

Paragraph 6 speaks to "a specified period of time. . ."

Paragraph 8 states "The duration of the written guarantee shall be tailored, as appropriate, to the specific contract award. The duration of the written guarantee(s) within any given contract award need not be the same for all specified performance requirements". To preclude extremely varied guarantee periods being required by different procurement agencies for the same generic weapon systems or self same components thereof a much greater degree of specificity regarding the guarantee period on duration is required in the guidance. In this regard, the end of the first sentence of the Guarantee clause at (f) should read ". . . paragraph (a) above within —— days after acceptance and delivery thereof."

Paragraph 11 discusses the identification and specific delineation in the contract of each circumstance that could void the guarantee. This is nearly an impossible task and is neither discussed or required by the present guidance at DAR 1-324. Furthermore, the example given is incorrect since the weapon system or component delivered under Line Item ——— of the contract is the item guaranteed. Spare parts subsequently incorporated in the weapon system would be subject only to any spare parts warranty incorporated in the spare parts acquiring contract. Should any discussion be required in the guidance regarding the conditions of use of the weapon system and/or component for the guarantee to be effective it should deal with proper operation and maintenance only. The circumstances relating to the alleged breaching of the warranty must of necessity be examined on a case by case basis.

Since the guarantee for material and workmanship starts at the time the weapon system or component is ". . . provided to the United States . . ."—i.e., the item is in the physical custody of the government—and even firm fixed price contracts are to contain a separate firm fixed price line item for the guarantee, the guarantee clause at (b) should read;

"(b) In the event of a failure of line item ——— to meet the conditions specified in subparagraph (a)(1) above or in the event of a failure of line item —— to meet at the time of delivery the conditions specified in subparagraph (a)(2) above except in the latter case those conditions identified on the custody transfer document."

Experience shows that complex weapon systems are often delivered to the Government based on conditional acceptance, with the Government acceptance document (DD250) noting that certain items are missing or are to be replaced. This modification is thus needed to make it clear that the repair or replacement of material and workmanship defects discovered prior to delivery are an obligation of line item ———, the acquiring line item, rather than the guarantee line item.

The imposition of a firm fixed price guarantee line item in each weapon system contract also gives rise to a concern regarding cost reporting; namely—work package cost, which is the very core of CCDR, CSCSC, etc. Will these reporting requirement be eliminated from contracts imposing the Guarantee or will revised requirements be forthcoming coincident with the Guarantee requirement?

Paragraph (c) of the Guarantee clause as presently written requires the revision and updating of all affected data called for under the contract. While in a philosophical sense this is parallel to the guarantee or weapon systems and/or components, it is not a requirement of the law and in a practical sense it leads only to still further contingent costs having to be paid for weapon systems and their components. The pricing of the firm fixed price guarantee line item for the weapon system and/or its components, which would include revision of all data directly related to any weapon system or component change, will be accomplished only with great difficulty and the prolonging of negotiations. Thus to add yet another unknown is not to the interest of either party.

With regard to election by the Government of a remedy for breach—i.e., have the contractor fix, reprocure or equitably reduce the contract price—addressed in the second sentence of paragrpah (f) of the Guarantee clause, the word "timely" should be inserted between "Upon" and "election." Since the contractor has the obligation to "promptly repair or replace" (after the Governments election to require repair or replacement) and, in the event of failure to repair or replace such parts promptly, the contractor must pay the cost of procuring such parts from and accomplishment of the repair by another source, it is only reasonable that the Government should "timely" elect either repair/replacement or equitable price reduction. Delay in the incorporation of any fix can only unnecessarily increase the cost of contract performance and quite significantly in multiyear, total package and long term priced option contracts.

In this regard it appears that the reference in the same sentence to "paragraph (b) or (c) above", should read "subparagraph (b) (1) or (2) above."

Grumman is pleased to present these comments for consideration in the promolgation of the final guidance on this proposed radical departure from fundamental Government contracting precepts. Should clarification of any of the comments presented by necessary, please contact the undersigned.

Respectfully,

R.J. MYERS,
Senior Vice President—Resources.

CONTROL DATA CORP.,
Minneapolis, MN, February 10, 1984.

Subject: DOD's Proposed Implementation of Section 794 of Public Law 98-212—Written Guarantees.

MS. MARY ANN GILLEECE,
Deputy Under Secretary, of Defense for Acquisition Management,
The Pentagon, Washington, DC.

DEAR MS. GILLEECE: The January 20, 1984 issue of the Federal Register invited written comments to DOD's "Draft Guidance on Written Guarantees," which was published in conjunction with the Public notice. This letter is Controlled Data Corporation's response.

Regulatory implementation of Congressional enactments is a difficult task in the best of circumstances. However, the task is not usually handicapped by legislation that is as conceptually flawed as Section 794 of P.L. 98-212. In essence, the principal defects, which we detail below, are created by the law. The DOD drafted guidance merely echoes these deficiencies; it neither adds nor subtracts from them. With this observation as a prologue, we offer these comments divided into two basic divisions—(i) the commercial product vendor and (ii) the DOD subcontractor or vendor:

I. IMPACT ON THE COMMERCIAL MARKETPLACE

A. *In addressing weapon systems and components thereof Section 794 and the draft guidance fail to recognize—let alone address—the problems and inherent contradictions tht arise when incorporating commerically-designed product into a weapon system.*

1. The law and the draft guidance reads as if all weapon system components (e.g., subsystems, assemblies, etc.) are designed and manufactured with the weapon system's performance requirements in mind. Of course this is not true! Commercially-offered products are designed and offered to the marketplace with their own product specification and performance criteria. The fact that a commerical product may be incorporated into a weapon system does not alter that fact.

2. In the context of the ADP industry and this company, we offer various central processors and associated peripheral products that are designed in response to perceived commerical market demands. Again, each product carries its own product and performance specifications. DOD does incorporate commercially-designed ADP into various weapon systems. (e.g., ground tracking stations) but the ADP's design was not predicated on such an application.

B. Warranties applicable to commercial products are inconsistent with the warranties/guarantees sought in Section 794 and in the draft guidance.

1. Commercial product warranties are not created (nor the product priced) taking into account the risk associated with a weapon systems performance guarantee. Typically any design warranty that is offered applies only to the adequacy of the specific product's own design. Similarly, defects in workmanship and material relate

to the product's performance characteristics, as measured against its own defined performance standards. Moreover, it is a standard commercial practice to disclaim all implied warranties and the application of consequential damages in case of the seller's breach.

2. In the context of ADP products and services we call to your attention the Government's provision entitled "Warranty Exclusion and Limitation of Damages." This provision appears in the DAR (see (7-2302.1) and the FPR (see 1-4.1110-1). Reading these identical provisions indicates the following:

a. Except for the implied warranty of merchantability, all other express and implied warranties are disclaimed, unless an express warranty is recited elsewhere in the agreement—this would typically be the seller's standard product warranty.

b. The seller will not be liable for consequential damges.

c. By disclaiming all implied warranties, except merchantability, it clearly removes the implied warranty of fitness for a particular purpose.

3. The implied warranty of merchantability states, among other things, that the goods to be merchantable must be 'fit for the ordinary purposes for which such goods are used." As a matter of policy both DOD and GSA recognized the wisdom is deleting the implied warranty of fitness for a particular purpose. Yet the result of Section 794 and the draft guidance, as presently written, would be to impose on the ADP vendor a specific, express fitness warranty, i.e., that the product will not adversely affect the weapon system's performance.

4. It is stated that the guarantee provisions do not apply to combat damage. Certainly in a commercial product setting this exclusion is inadequate. The vendor should not be responsible under its warranty/guarantee commitment for other additional causes, such as, misuse, improper attempted repair, etc., that are recognized as proper exceptions in the marketplace.

5. It has been an oft-stated goal of the Executive Branch and Congress to utilize commercially available products to the greatest degree practicable in meeting DOD hardware needs. The cost savings when compared to specially designed products are evident. Unfortunately Section 794, as implemented, will yield an opposite result. The unreasonable risk (associated with "passing on" the weapon system guarantee) will cause many vendors to "no bid" their products for a weapon system application.

C. Recommendation: It is unfortunate that Section 794 does not specifically exempt the application of commercial products from the weapon system guarantee. Despite that fact, we believe that the DOD guidance document can, and should do so. Section 794(a)(1) assumes the system and each component thereof were designed and manufactured to conform to the stated performance requirements. Since this assumption is invalid when applied to commercial products, we believe it is within DOD's permissible interpretative judgment to write a commercial products exemption into the guidance document and its model clause.

II. IMPACT ON DOD-ORIENTED PRODUCTS

A. Many of the commercial vendor objections, discussed above, also apply to DOD subcontractors who design and manufacture products to their own specifications.

1. There are various DOD end use subassemblies, components and piece parts that the vendor designs and manufacturers without focusing on a specific weapon system performance need. Again, these products are designed to their own product specifications, not a higher-level application. It is the Government, or the prime contractor, who should assume the risk that these products are expressly fit for the defined purpose. Illustrative of such items are: inertial devices such as gyroscopes and accelerometers: Mil. spec. versions of commercially-developed products such as ADP peripherals and microcomputers: Hi-rel piece parts.

2. We also recommend that military end-use products of this nature should not require the vendor to share in any "pass-on" of the weapon system guarantee.

B. The allocation of risk for the specifically-designed system components will present major administrative and legal problems—the cure is worse than the disease.

1. Assuming that by proper "rule-making" (i) the commercial market products, and (ii) the "free-standing" DOD end-use products are exempted in the DOD guideline, as to the balance there remains these central questions:

a. Can there be a fair allocation of risk, down the subcontract structure?

b. Is the allocation effort worthwhile—considering the administrative and legal implications, coupled with the cumulative added costs the vendor structure will add as a "premium" for the risk?

2. The fair allocation of risk is greatly complicated by the nature of DOD weapon system work. The prime/lower-tier subcontract structure is active, not passive, with

regard to design, prototyping and manufacturing various subsystems and assemblies. The vendor is not "left alone"; rather the "changes" clause represents a contractual means for the prime, or higher-tier sub, to interpose its technical judgments on the subcontractor. All too often the subcontractor is engaged as the "expert" in the area but the ultimate product is not the sole result of his own decision-making. In this context, is it fair to assign 100% of the device's "weapon system guarantee" responsibility to the vendor? We think not. Some proportionality, akin to the comparative negligence theory, seems fair and appropriate. Unfortunately, to apply such an approach will require lengthy fact-finding and analysis that would tax the wisdom of Solomon.

3. We conclude that the "pass-on" of a weapon systems guarantee is a counterproductive policy. We suspect that many vendors will choose not to participate believing the risk allocation to be unacceptable. To the extent this attitude is adopted, DOD will be denied valued sources of supply. Other vendors will add a sizable "premium" as a condition to contracting under this consequential damage-type environment. The cumulative cost of this "term insurance" we believe will exceed the potential benefit, also considering the administrative and legal tasks associated with its implementation. In the dynamic weapon system environment, the government should be a "self-insurer" as to the costs associated with system performance.

4. *Recommendation:* Even assuming the regulatory exemptions discussed earlier, the main remaining thrust of Section 794 and the guidance is counterproductive and not cost effective. We recognize that the implementing guidance cannot, within proper rule-making, abrogate the law. Consequently, we urge the DOD to seek a Congressional review of Section 794, pointing out its major conceptual flaws, and urge its repeal.

Control Data appreciates the opportunity to provide its views on this subject matter. Should you desire clarification or elaboration on any point raised in this letter, please contact the undersigned.

Very truly yours,

W. E. PORTER, *Assistant General Counsel.*

GENERAL DYNAMICS CORP.,
St. Louis, MO, February 10, 1984.

Hon. MARY ANN GILLEECE, Esq.,
Office of the Deputy Under Secretary for Research and Engineering (Acquisition Management), The Pentagon, Washington, DC.

DEAR MS. GILLEECE: The following is submitted in response to the notice published in the January 20, 1984 Federal Register seeking comments on the Draft Guidance on Written Guarantees. The Guidance is the proposed implementation of section 794 of the Department of Defense Appropriations Act of 1984 (Public Law 98-212).

General Dynamics is a large business firm which manufactuers a wide range of products for the Department of Defense. These vary from small electronic products to missiles, aircraft, tanks, and submarines. We wish to comment on certain aspects of the statute, its proposed implementation and express our opinions as to potential problems and related costs.

APPLICABILITY

Whenever a major change in procurement practices is promulgated, industry is concerned with the resultant interpretation and implementation by the individual procuring activities. If the Guidance is not specific, the tendency is attempted over-implementation. This oftentimes extends the negotiation process, creates adversarial relationships, and impacts costs.

Our primary concern involves the application or attempted inclusion of the guarantee clause in a broader range of contractural situtations than that either intended or required by the statute.

The statute requires written guarantees within a production contract. It is our belief that the definition of "procurement" as contained within paragraph 1(c) of the Guidance, and the reference to "all government contracts for production" in paragaph 3 thereof is vague and could very well be misleading as to the applicable covered contract type. In addition, the application set forth in paragraph 2 goes beyond the statute and is probably legally improper.

DAR 3-405.1(b) stipulates "the cost-reimbursement type contract is suitable for use only when the uncertainties involved in contract performance are of such magnitude that cost of performance cannot be estimated with sufficient reasonableness to permit use of any type of fixed price contract." Section 3 of DAR limits the appli-

cability of cost reimbursement contracts to research, development, and test. Conversely, DAR 3-402.2 reads "The firm fixed price contract is suitable for use in procurements when reasonably definite design or performance specifications are available and whenever fair and reasonable prices can be established at the onset . . ." A firm fixed price contract or incentivized version of a fixed price contract are contemplated and required by DAR for use as "production contracts."

Paragraphs 10 and 11 of the proposed guidance addresses at length the cares and the delineations which must be exercised during the negotiations of the contract in order to implement the intent of the Act. Accordingly, the incorporation of the proposed Guarantee Clause into an advertised procurement is impossible since negotiations are not permitted thereunder.

Therefore, by elimination, the sole logical application of guarantees would be limited to negotiated fixed price contracts.

The definition of "Contract awards" set forth in paragraph 3 of Policy Guidance is an expansion of the scope intended by the statute. Subparagraph (d) of Section 794 of PL 98-212 states that written guarantees shall apply "only to contracts which are awarded after the date of enactment of this Act . . ." However, paragraph 2 of Policy Guidance invokes application not only to contracts awarded subsequent to 14 March but also to modifications to existing contracts, exercise of priced production options under present contracts, placement of an order under an existing DOA and definitization of a letter contract. It is our opinion that options to existing contracts do not require the incorporation of language mandated by a statute passed after award of that contract. Moreover, we do not agree that the placement of orders under preexisting basic ordering agreements requires the inclusion of statutory guarantees. An option is a one-way obligation whereby a contractor must stand by his agreement to sell at a specified price. If the written guarantee were to be applicable, the guidance would negate the unilateral right to exercise an option and mandate a bilateral negotiation to determine the separate line pricing for the warranty. An obvious problem results if the required option exercise date passes prior to the conclusion of the negotiations. The practical effect could be a potential negation of an unfavorable option if the contractor chose to do so.

Paragraph (a)(1) of the statute requires a guarantee "that the system and each component thereof were designed and manufactured so as to conform to the government's performance requirements as specifically delineated . . ." The implementing words in paragraph 3(a) of the Policy Guidance are nearly identical. The contractor must have complete control over the design in order to guarantee. This simply is not the case in today's world of major weapon system procurement. At best, the design of a modern weapon system evolves through a process involving the Congress, the procuring agency, and the contractor. These procedures are generally spelled out and contained in DOD directions 5000.1 and 5000.2. The contractor has only limited control on these situations.

In other instances such as the procurement of the SSN 688 submarines, a company such as General Dynamics has no design responsibility. The design agent is another contractor and our responsibility is simply to implement the design and changes dictated through the Government. Similarly, a company producing under a second source build to print production contract has no control over design.

Moreover, the statute and Policy Guidance are silent as to bestowing upon the contractors the unilateral right to make necessary design changes in order to meet and fulfill the stipulated Government performance requirements. Conversely, the standard DAR changes clause allows the Government to make unilateral changes to the design. This Government power to effect changes to design is inconsistent with the contractor's need to control design if, in fact, it is to grant a guarantee on that design. If a contractor is not afforded the opportunity to control its design from inception, then by necessity the contract must contain a Government guarantee that if the contractor complies with the design imposed by the contract the performance guarantees would be satisfied.

Thus, the only meaningful application of the written guarantee clause would be on negotiated fixed price production contracts which do not contain a DAR changes clause on which the design specifications have been drafted by the contractor. In addition, legally and practically, the application of guarantees should not be invoked within modifications to existing contracts. The Policy Guidance should be revised to clearly and specifically state accordingly.

ADMINISTRATION

The following is a listing of areas which, if not addressed and corrected, will predictably impact negotiations and administration.

The statute stipulates that the guarantees are applicable not only to "prime" contracts, but also to "other contracts." The Policy Guidance is silent on flow down to subcontractors. Subcontracts strongly resist acceptance of guarantee type clauses. Historically we have found that many subcontracts on major programs have yet to accept the Correction of Deficiencies Clause. We feel it to be absolutely essential that the guarantee obligations flow down to the subcontracts. Experience has indicated this only occurs if the flow down is required either by DAR or Government regulation. It is recommended the Policy Guidance be so modified.

Paragraph 1(a) of the Guidance neither adequately defines components nor provides differentiation between that and a spare part. How far down does a component extend? Does a nut and bolt upon assembly constitute a component? This ambiguity needs resolution to avoid subsequent disputes and to reduce negotiation times.

A significant incompatibility exists between the statute and the Policy Guidance in regard to "performance requirements." Paragraph (a)(1) and (2) of the statute state that conformance is to the Government's performance requirements as specifically delineated in the contract. Paragraph 1(d) of the Guidance defines "specified performance requirement" as "any specifically delineated mandatory performance requirement set forth anywhere in a government production contract . . ." A typical weapon system contract contains specifications, statements of work, test procedures, drawings, mil-specs, etc., which in turn reference and incorporate subsidiary documents; each or all of which will include performance requirements. To jointly attempt to review every document as contemplated by paragraph 10 to "scrub" those performance requirements which are not to be guaranteed will be a prolonged and tedious process. The fear will always be to overlook an obscure requirement which someone at some later point in time will identify as a requirement which was breached. A proper and mandatory revision to the Policy Guidance is required implementing correctly the Act by stipulating that the performance requirements to be guaranteed will be clearly and specifically listed within the contract.

Paragraph 5 of the Policy Guidance implies if the specified performance requirement is a test demonstration, a successful completion of the test demonstration will satisfy the guarantee. The statute does not appear to be so limited. Accordingly it is suggested paragraph 5 of the Guidance be revised to stipulate contract language be used which makes satisfactory completion of the test conclusive against the Government.

The statute exempts application of the act on property furnished by the Government to the contractor. The proposed Guidance is silent on the subject of Government property. The proposed clause addresses defects in installation, however, ignores the broad issue of failure in performance. In most of our major weapon systems the power sources and major electronics systems are furnished as GFP. The Guidance does not address the complicated issue of the interrelationships between the various articles of GFP and between GFP and contractor supplied portions. The contractor is not protected against failures in Government designs, and failures in the GFP which result in failures to the contractor furnished equipment. These issues must be addressed and direction set forth in the Policy Guidance.

The proposed clauses are more expansive than the statutes in the treatment of costs. The Act requires prompt repair or replacement of parts. The Policy Guidance is inappropriate since it also mandates system redesign, round trip transportation, and price reductions.

The proposed clause is silent as to whom, how, and where the determination will be made as to conformance with the specified performance requirements. Conversely, the clause fails to stipulate who has the authority to notify of non-conformance and the time limit after discovery to notify of such non-conformance.

COSTS

It will be most difficult for the Contractor to cost guarantees. It will probably be just as difficult for the Government to conduct a valid cost analysis on the Contractor's proposal. The Policy Guidance should be revised and clarified to ease and facilitate the Government/Contractor negotiation process and to reduce overall costs. These are:

A. An exculpatory clause barring any assessment of or Contractor liability for "special" and "consequential" damages whether the same be based in tort or in contract.

B. A disclaimer which specifically excludes (1) implied warranties, (2) merchantability and (3) fitness for purpose.

C. A total overall limit of liability for damages expressed as a per cent of the contract price.

D. A clause providing that the contractor is not liable for any "defect," the existence of which the contractor advised the Government of, if the Government did not subsequently authorize the correction of such defect.

E. The Contractor must be assured contractually of the continued use of Government facilities, test equipment, drawings, tooling or any other Government owned item necessary to permit repair, replacement, redesign, etc. of a guaranteed item through the period of the guarantee liability. If this assurance is not specifically provided, the Contractor must include the cost of replacement of all existing Government provided items.

F. The language must be made clear that Contractors have the right to determine if a defective item is to be repaired or replaced. If the election is to repair, then the contractor must also have the opportunity to choose either repair in the field or return to the factory. The cost differential, particularly on weapon systems located outside the CONUS could be substantial.

The risks and resultant costing of assuming guarantees on production costs prior to the completion of development contracts or first article production testing would be substantial. Additional cost factors involve guarantees from suppliers, failure analysis of system/components to determine liability plus the mutual costs of administration.

One method industry has traditionally utilized to cost guarantees is to insure. We requested a review of the statute and its proposed implementation by our insurance brokers. Selected statements from their analysis are:

A. "Due to the limited size of the aviation insurance marketplace, we seriously doubt that adequate capacity could be generated to insure this exposure."

B. "In our opinion, these guarantees, as they relate to the missile/launch vehicle exposure, are uninsurable."

C. "At this point, we are unable to provide you with an anticipated range of premiums to insure these exposures, as the markets we spoke with were unwilling to give us any indications of cost and any figures we might come up with would be pure conjecture on our part. It should also be noted that if any capacity to insure these guarantees is available from the commercial aviation insurance marketplace, it would at this time be of very limited nature. The period of time for which such insurance could be obtained would be 12 months and certainly would not exceed 18 months, probably far short of the time frame of the guarantees."

CONCLUSION

The statute will increase costs, create administrative problems and disrupt long established methods and principles of contracting. Clear and complete guidance is required in order to mitigate the impact of these negative factors. It is our belief the incorporation of the above suggested changes will be beneficial in achieving that goal.

Please call me if I could be of assistance.

Sincerely,

FREDERICK S. WOOD,
Corporate Vice President—Contracts and Pricing.

NEW ORLEANS, LA, *February 15, 1984.*

Subject: Warranties on Military Weapons.

Senator RUSSELL B. LONG,
U.S. Senate, 217 Russell Senate Office Building, Washington, DC.

DEAR SENATOR LONG: Warranties are a normal requirement of contracts worldwide. If a contract binds two parties—one to pay for a specified product, and the other to supply the product as agreed—why can't we demand to "get what we pay for"?

The Warranty Law sponsored by Senator Andrews now in effect should not be negated by repeal "hidden" in the Defense Department's Supplemental Appropriation request. Anyone who believes warranties detract from technological advances is not in touch with business, NASA or communication statellite manufacturers!

Please use your influence to exclude any such repeal and in fact support compliance. Taxpayers need the benefit of cost efficient purchasing.

Very truly yours,

JACK WISEMAN.

NEW ORLEANS, LA, *February 15, 1984.*

Subject: Warranties on Military Weapons.

Senator J. BENNETT JOHNSTON,
U.S. Senate, 136 Hart Building, Washington, DC.

DEAR SENATOR JOHNSTON: It seems fairly obvious that each individual member of the Defense Department demands warranties on those products for which they spend their own money. Why can't we, as a body expect them to have the same consideration when they spend the taxpayers money?

The "Warranty Law" sponsored by Senator Andrews, which is now in effect, should not be repealed by a "hidden" provision of the Defense Department's Supplemental Appropriation request. Anyone who believes warranties detract from technological advances needs to discuss this with NATO and NASA!

Please use your influence to exclude any such repeal and assure the taxpayers we're going to "get what we pay for".

Very truly yours,

JACK WISEMAN.

NEW ORLEANS, LA, *February 15, 1984.*

Subject: Warranties on Military Weapons.

Hon. ROBERT L. LIVINGSTON,
House of Representatives, 306 Cannon House Office Building, Washington, DC.

DEAR MR. LIVINGSTON: Knowing full well the vast amount of money initially spent on weapons, it seems ludicrous that companies are not required by contract to guarantee their compliance with the specifications issued with the purchase order/contract. Why can't we expect "to get what we pay for"?

I fully agree with Senator Andrews that this should be the bare minimum. Anyone who believes warranties detract from technological advances needs to study business, NATO, and NASA purchasing procedures!

Please use your influence to exclude the warranty repeal "hidden" in the Defense Department's Supplemental Appropriation Request.

Very truly yours,

JACK WISEMAN.

THE BENDIX CORP.,
AEROSPACE-ELECTRONICS GROUP,
Arlington, VA, February 16, 1984.

Hon. MARY ANN GILLEECE,
Deputy Under Secretary of Defense for Research and Engineering (Acquisition Management), The Pentagon, Washington, DC.

DEAR MS. GILLEECE: By notice in the Federal Register, the Department of Defense (DOD) invited industry to submit written comments on the proposed guidance to implement Section 794 of the fiscal year 1984 DOD Appropriations Act.

First, the requirement to bear all costs necessary to achieve the specified performance requirements is so onerous as to overwhelm any contractor. For a complete weapon system, the replacement could involve the development of an entire newsystem "at no increase in contract price and at no cost to the government". Therefore, this raises the question of enforceability by the government as such an undertaking would be beyond the financial ability of most suppliers of major items.

Also, since the OEM or prime contractor will flow down the warranty to subtier contractors, the above requirement will be applicable to any major subassembly or component and the liability will pass to many small business operations. Because the small businessman will be unable, or unwilling to pay for adequate insurance protection to cover this contingency, we anticipate much difficulty in getting vendors to accept the provisions of the new statute. Ironically, we have laws aimed at increasing competition so small business can compete on government procurements.

As such, it is rather difficult, if not impossible, to see how we can satisfy both objectives.

Needless to say, Section 794 and the proposed implementing guidance are raising numerous serious questions in the aerospace industry Some of the questions are:

(a) Why should the guarantees be applied to cost type and flexibly priced contracts?

(b) Since DOD retains design control, how does the contractor obtain the needed technical flexibility to protect his written guarantees?

(c) The policy guidance states that a specified performance requirement can be set forth "anywhere" in a production contract. We foresee this approach leading to many issues and problems downstream. During negotiations, why not establish the desired performance requirements and set them out in a separate section of the production contract to avoid confusion at a later date?

(d) And, contrary to Senator Andrews belief (January 19, 1984 letter to you on warranties) commercial sector warrantees do contain disclaimer language for misuse, improper maintenance, use of component parts not manufactured by the contractor, etc. Since industry will place restrictive language on the warranties relative to proper use and maintenance, who will set the guidelines for conditions that may void the guarantee?

The above are but a few of the many pertinent points being raised by industry and require resolution prior to full implementation of Section 794. But, since we are aware of AIA's efforts on this subject and fully support their position, it would be redundant to go into much more detail.

However, perhaps the major stumbling block in the implementation of Section 794 is the ability of DOD and the military services to manage and administer this new statute. It is our judgment that the paperwork requirements associated with the guarantees are of such proportions that it will literally require hundred of people, if not thousands, to manage the paper flow. The key to an effective warranty is the ability to enforce. Accordingly, DOD must determine whether adequate means and controls are in place to permit effective measurement and enforcement of the type of guarantees envisioned by the Act.

Finally, the ability to design and manufacture sophisticated weapons systems to meet highly detailed performance specifications at the limit of the state-of-the-art is not an exact science such that total compliance can be assured at the onset. Therefore, should this become a requirement for government contractors. fewer participants in complex systems and much higher prices to the government to offset this very severe risk will, no doubt, result. Performance guarantees, as proposed, are not the cost-effective solutions to the procurement of high quality, reliable systems.

Sincerely,

B.W. LALUSH,
Vice President, Contracts and Product Support.

LITTON SYSTEMS, INC.,
INGALLS SHIPBUILDING DIVISION,
Pascagoula, MS, February 17, 1984.

Subject: Draft Guidance on Written Guarantees, Comments on.

Reference: (a) Section 794 of the Department of Defense Appropriations Act, 1984 (Pub. L. 98-212) as Published in the Federal Register, Vol 49, No. 14 of January 20, 1984, pages 2502 through 2506.

DEPARTMENT OF DEFENSE, OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING (ACQUISITION MANAGEMENT),
The Pentagon, Washington, DC.

GENTLEMEN: In response to Reference (a), which asks for comments on the draft guidance on written guarantee, Ingalls has reviewed the draft language and offers the following suggestions and/or concerns:

SPECIFICALLY DELINEATED PERFORMANCE REQUIREMENTS

Specifications are drafted in goal oriented language and many performance type requirements are included in all levels of the specifications. Often, these are goals or objectives. It is impracticable to expect a contractor to guarantee performance requirements contained "anywhere in a Government production contract" to include all primary and secondary referenced military specifications or even contractor technical proposals.

Specifically delineated performance requirements should be contained in the contract schedule or in a Special Provision. This is the most critical part of the new statute and the intent of the parties must be consolidated to one specific portion of the contract. Paragraph 10 of the DOD guidance should be specific in this regard. The guidance should include instructions to purge goals and objectives from specifically delineated requirements. It should instruct the DOD negotiators to specifically list the performance requirements which will be subject to guarantee in a single section or clause of the contract.

WEAPONS SYSTEMS AND COMPONENTS

The definition of a weapons system is too broad. A ship, for example, contains a number of weapons systems and other systems. Narrowing the definition of weapons systems would enhance the ability to clearly define requirements and control the cause and effect relationship. Language relative to mission essentiality would be appropriate. The statute does not seem to apply to the non-combat aspects of a ship. The draft guidance should be specific in this regard and the guidance should be specific as to what is *not* intended in the definitions of weapons systems and components. For example, if a ship is the "weapons system", would the ship's ice cream maker be a "component" which requires a performance guarantee?

GOVERNMENT FURNISHED ITEMS

Paragraph (b) of the statute provides that a guarantee does not apply in the case of any weapons system or component thereof which has been furnished by the Government to the contractor.

In many Government contracts the Government accomplishes the design and furnishes it to the contractor. The Government furnishes procurement specifications which define the components to be procured and installed. The Government also furnisheds the contract drawings which generally specify the components to be placed on the ship and the general arrangement of such components within the ship. Obviously, with this degree of control by the Government, the contractor can only be responsible for proper material and workmanship and not for overall system performance.

Therefore, the exclusion should apply not only to Government-furnished property, but also to Government-furnished designs, Government-furnished product specifications, Government-directed component procurement and related interface with contractor responsible items.

SUBCONTRACTOR

The DOD guidance is lacking in defining the methods and extent of applying the statute to subcontractors. Is the requirement limited to the prime and first tier subcontractors or does it automatically flow down the entire chain? No procedures are included for methods, reviews and approvals regarding the flow down of the requirement to subcontractors. Certainly, Government invovlement is required regarding the application of guidance paragraphs 8 through 12 as it relates to the extent and price of subcontractor guarantees.

Additional time should be allowed in the bid and proposal cycle so that prime contractors can determine the cost and the basis for the guarantee of each component manufacturer.

It is possible that component vendors will require that identical spare parts be procured from the original source to prevent voiding of the guarantee. This will frustrate efforts to breakout the procurement of spare parts and will limit competition.

Small business and/or minority business component manufacturers may be placed at a significant disadvantage due to a small base upon which to amoritize the risks of a performance guarantee.

The language in the statute is interesting in that it refers to guarantees from prime contractors or from "other contractors". The DOD guidance fails to address the significance of the *Government obtaining* guarantees from other contractors as the act requires. Does the act not require a limited privity of contract between the Government and component subcontractors (other contractors)? Assuming the Government fails to meet this direct requirement of the act and places on prime contractors the burden of obtaining subcontractor guarantees, the guidance is lacking in instructions regarding circumstances where component manufacturers refuse to provide guarantees. Of particular concern are those subcontractors who are sole

source or a Government directed source, although in each instance the proper interpretation is that such components are considered "furnished" by the Government.

APPLICABILITY OF PROVISIONS TO EXISTING AGREEMENTS

The DOD guidance specifies the types of actions which constitute a contract award for the purpose of the statute. For example, an increase in guantities modification to an existing contract, the exercise of a *priced* option and the placement of an order under a BOA constitute contract award. The guidance should contain precise language to allow for the pricing of the impact of the new requirements in, for example, the priced option or under the BOA order.

It is pertinent to note that the guidance goes well beyond the statue in this instance. Certainly, the statutory language applying the requirements to contracts awarded after enactment of this act does not intend to invoke the requirments to any modification to pre-existing contracts, to the exercise of options to pre-existing contracts, nor to the placement of orders under pre-existing BOAs, particularly where the Government has the right to place unilateral orders.

Once the statute applies to a new contract, the DOD guidance is silent regarding the treatment of contract modifications altering the weapons systems. The magnitude of change orders normally isssued to weapons systems merits specific guidance for both the guarantee requirements of the changed work and the impact of the changed work on guarantees which were pre-existing. Must each change order negotiation now settle the impact on the guarantee? Surely, it should and guidance is required as to implementation procedures.

TYPE OF PROCUREMENT CONTRACT

The language in the act deals with performance requirements delineated in a production contract, yet the DOD guidance fails to address the difference between production and development. Without clarifying guidance, there is no mechanism to handle the differences. Many procurements involve elements of research, testing, evaluation and development which certainly should not be covered. If development and subsequent production are involved in a single procurement, is it intended to defer negotiation of the guarantee until production begins? This seems to be the intent of the statute.

Performance requirements that are developmental should be defined by goals or objectives, should be identified as such, and should not be specified performance requirements subject to guarantee.

If care is not taken and precise guidance not provided, an undesirable side effect may result. Specifically, contractors will tend to install proven systems, thus progress in all elements of development will be impeded because of the potential correction costs that could be incurred if a newly developed system does not meet specified performance requirements.

GOVERNMENT REMEDIES AND THE SAMPLE CLAUSE

The statute is precise in requiring a contractor to bear the cost of repair or replacement of such parts as are necessary to achieve the required performance requirements. The DOD guidance goes well beyond this remedy. See particularly guidance paragraph 5 and paragraph b of the draft clause.

The guidance should closely follow the specific language of the statute. Therefore, the contractor should be permitted to recover all costs except parts repair and parts replacement.

The draft clause should not provide for contractor liability in excess of the statute. For example, the cost of transportation is beyond the scope of the statute and is beyond the scope of a commercial guarantee where the buyer is responsible to return an item under guarantee to the manufacturer for correction. Similarly, the statute does not impose a reporting requirement, yet the clause does.

The draft clause requires an equitable adjustment in the price of the supplies in the event the Government chooses not to have an item corrected. This goes beyond the requirements of the statute and could lead to disputes over meaningless deficiencies, the adjustment for which may be difficult if not impossible to quantify. Certain obvious performance requirements e.g., speed, if not met, cannot be reasonably nor practicably corrected. In such instances, a remedy in lieu of correction or equitable adjustment in the price of the supplies seems prudent, i.e., preset liquidated damages should be the remedy where a fix is not practicable and/or cost effective.

DURATION AND COMPLIANCE MEASUREMENT

The language of the DOD guidance leaves the duration of the guarantee as a matter of negotiation. However, the language of the statute is very precise in mentioning that the contractor shall guarantee that systems and components are free from defects at the time they are provided to the United States. In the case of Combat Naval Vessels, satisfactory completion of acceptance trials conducted by the Board of Inspection and Survey (INSURV) should satisfy the performance guarantee.

The method of measuring compliance is inadequately covered in the guidance. The specific method of determining compliance to performance requirements must be fully understood by all parties at the time of agreement and the guidance should discuss this important aspect. The particular tests and trials which are to be the basis for evaluating system conformance to the Government's performance requirements should likewise be defined at the time of agreement.

In summary, we feel that, while the goals of the new clause have merit, significant revision and clarification will be required to arrive at a mutually acceptable, workable clause. We will be pleased to provide further discussion on any or all of the foregoing at your request.

Very truly yours,

R.S. SAGE
(For J.C. Arledge III, Director, Contracts Administration).

CONGRESS OF THE UNITED STATES,
HOUSE OF REPRESENTATIVES,
Washington, DC, February 17, 1984.

CASPAR WEINBERGER,
Secretary, Department of Defense,
Washington, DC.

DEAR MR. SECRETARY: I urge you to clearly and unequivocally support the weapons systems warranty law passed by Congress last year.

The interminable debate within your department over this law reminds me of George Bernard Shaw's description of metaphysical inquiries: like searching in an unlit cellar at midnight for a black cat who is not there.

Sincerely,

PAT SCHROEDER, *Congresswoman.*

MARTIN MARIETTA AEROSPACE,
ELECTRONIC SYSTEMS DIVISION,
Orlando, FL, February 17, 1984.

Subject: Public Law 98-212, Section 794; "Warranties"

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING,
The Pentagon, Washington, DC.

GENTLEMAN: This is in response to your invitation to respond to the subject Notice of Draft Guidance on written guarantees.

Martin Marietta Orlando Aerospace is of the opinion that the extraordinarily broad and sweeping application of the warranty provisions envisioned in the Legislation will unnecessarily disturb and substantially increase the cost of major weapon system acquisitions without benefits of like value.

Although well-intentioned, the Legislation may very well turn out to be counterproductive. Since it appears to be based on certain inaccurate assumptions, it will generate significant implementation problems and provides the potential for serious unintended consequences. It certainly is not cost-effective nor readily enforceable. It will negate existing acquisition initiatives intended to enhance competition, reduce costs, facilitate breakout and encourage small business participation.

In summary, it is poorly conceived and should be repealed.

Very truly yours,

H.D. GILBERT,
Director of Contracts.

MACHINERY & ALLIED PRODUCTS INSTITUTE,
Washington, DC, February 17, 1984.

MS. MARY ANN GILLEECE,
Deputy Under Secretary of Defense for Research and Engineering (Acquisition Management), The Pentagon, Washington, DC.

DEAR MADAM SECRETARY:

PROPOSED GUIDANCE ON WRITTEN GUARANTEES

The Machinery and Allied Products Institute (MAPI) wishes to respond to the notice in the Federal Register of January 20 inviting comments on proposed guidance to implement the new statutory warranty requirement relating to weapon system procurements. In brief, the guidance would implement Section 794 of the Fiscal Year 1984 Defense Appropriation Act (P.L. 98-212) which provides that no funds may be obligated or expended for the procurement of a weapon system unless the contractors for such system provide specified written guarantees to the United States. As we understand it, the statutory requirement will apply to contract awards made after March 14, 1984, following the expiration of a 90-day waiver granted by then-Deputy Under Secretary of Defense Thayer shortly after enactment of the statute.

As I believe you know, MAPI represents the capital goods and allied product industries of the United States. Although most of the companies in these industries are oriented towards commercial rather than government sales, these companies are the source of continuing technological improvements and product excellence, and many of them are indispensable to the fulfillment of the government's requirements in the national defense area. Hence, our deep interest in the new statutory warranty requirement and its implementation by the Department of Defense (DOD) in the proposed guidance recently issued.

We wish to make it clear at the outset that we are opposed to the new statutory requirement and we support the Administration's recommendation that this requirement be repealed.[1] In response to the Federal Register notice, we include in this letter our comments and recommendations concerning the proposed guidance. However, this is preceded by a brief statement of our reasons for opposing the statutory requirement because our position on this fundamental issue affects the tenor of our comments and recommendations on the proposed guidance. In summary, we feel that the guidance is unworkable, regardless of the improvements that can and should be made in its content, because the underlying statutory requirement on which the guidance is based is itself completely unworkable.

Problems resulting from the statue

The statutory requirement leads to the following problems which, in our view, are more than sufficient reason to justify the recommendation for repeal.

1. Despite claims to the contrary by its proponents, the statutory requirement adds nothing to the existing contractual incentives for efficiency and economy. Indeed, if anything, the statute is likely to detract from efficiency and economy because it will probably lead to a reduction in performance requirements generally to what is more certainly "achievable" in a given case. This in turn will lead to a loss in creativity and technological reach.

2. The statute will make it difficult, if not impossible, for prime contractors to continue their exitsting make-or-buy arrangements with respect to major end items, and will encourage them to pull more work relating to components back "in-house." This, of course, will result in a loss of defense business for subcontractors generally and small business particularly. In addition, for the same reason, it will be more difficult for the government to achieve its objective of obtaining greater competition in the procurement of spare parts.

3. It is unreasonable to require contractors, as the statute does, to guarantee the design of a weapon system or component thereof when DOD normally controls design of such systems; this is considerably different from the situation in commercial work where the manufacturer normally determines design, specifications, etc., on the item purchased. Moreover, in an instance where a particular contractor participated substantially in determining the design in question, another contractor cannot resaonably be expected to guarantee the design work. The result is that the statutory requirement will create an impediment to achieving competition on production contracts following the completion of the design work.

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[1] Budget of the United States Government, FY 1985—Appendix, page I-G73.

4. The statute will almost certainly cause substantial cost increases in defense procurement because contractors generally are expected to treat it as a new and very substantial contract item for which the government should be charged. In addition, there will be increases in administrative costs and costs relating to subsequent disputes and litigation concerning alleged noncompliance with the new warranty requirement.

5. The statute will inevitably lead to stretching out schedules for testing, and it will also tend to discourage innovation as pointed out above. This, again, results from the fact that there is going to have to be greater certainty that performance requirements, if they are to be guaranteed, are "achievable."

6. For the above reasons, companies with options will be further discouraged from participating in defense procurement, which in turn leads to further erosion of the defense industrial base. The base erosion problem is serious on other grounds; the new policy will make it worse.

THE DRAFT DOD GUIDANCE

We turn at this point to consider the proposed guidance and the principal issues which we think it raises. In general, this discussion assumes the undesirability of the statute for the reasons indicated above.

Exclusion for development contracts

Probably the fundamental issue concerning the proposed guidance is the question of its possible application to development contracts. The difficulty is that such a contract concerns an item still in the developmental stage and with respect to which performance requirements cannot yet be set. Consequently, it is unreasonable to require performance and other guarantees with respect to such items, and the proposed guidance should provide assurance that such guarantees are not required in development contracts.

As it now reads, the proposed guidance, following the language of the statute, refers to "all government contracts for the production of a weapon system or components thereof." There is no mention of development contracts or work. We are concerned that in certain situations some development work may still be necessary on an item which is otherwise generally at the production stage. In any contract for that item, guarantee requirements should not be used or, at most, they should apply only to the production phase. For this reason, we think that the guidance should be revised to provide an express exclusion for application to development contracts or work.

Nonapplication to cost reimbusrement contracts

There also should be a specific exclusion for cost reimbursement contracts. This recommendation is based on the fact that, as a practical matter, cost reimbursement contracts are used when a weapon system is in the development stage and there is some question concerning performance requirements and whether such requirements can be achieved. Under these circumstances, it seems apparent that guarantees with respect to performance requirements would be unreasonable and entirely inappropriate.

The definition of "weapon system"

Section 1 of the proposed guidance contains a detailed definition of what comprises the term "weapon system." It states that, in addition to rather obvious examples, it includes "software, ordnance, related support equipment, such as ground handling equipment, training devices, test equipment, and their accessories."

The difficulty is that the definition, although apparently comprehensive, conveys no concept of what is not included. Accordingly, we suggest that the definition be expanded to state at least a few examples of types of equipment procured by DOD which do not constitute either a weapon system or a component thereof.

Other terms needing definition—"Production" and "Development"

Section 1 should be revised to include a definition of the term "production" as used in the context of the guidance. In addition, assuming that "development contract or work" appears in the text of the guidance as recommended above, the term "development" should be defined.

Contract modifications and priced production options

Section 2 provides certain rules with respect to whether a contract modification to add additional quantities, the exercise of a priced production option, and the like, constitute a contract award for the purpose of applying the March 14, 1984 effective date of the proposed guidance. We urge that this coverage be expanded to make it

clear that the contractor is entitled to an appropriate price for any required warranty, even if such warranty and the cost thereof were not considered at the time the initial contract was executed.

Time period covered

Section 8 provides that the duration of the written guarantee "should be tailored, as appropriate, to the specific contract award." We think that in view of the significance of the time-period issue in this context, it would be desirable to provide specific criteria on this issue in the proposed guidance.

Design changes ordered by the Government

If the contractor has provided the required guarantee with respect to the design of an item and the government orders a change in the design of that item, it is unclear what the effect would be on the guarantee. Clearly, appropriate coverage in the guidance is needed.

The Government's warranty responsibilities

A very important matter not dealt with in the guidance concerns the responsibilities of the government with respect to warranties. For example, if the contractor is required to provide a warranty with respect to a particular item, what are the government's correlative obligations with respect to servicing and repair of the item under contractor warranty? Further, what assurance does the contractor have that the government has in fact complied with any such correlative obligations? These issues need to be dealt with in the proposed guidance.

Further exclusions—Commercial items

The waiver authority of the Secretary of Defense should be exercised to extend waivers, in the interest of national defense or cost effectiveness, for commercial items generally (i.e., items which are designed for the commercial market rather than specifically for inclusion in a weapon system).

Commercial product warranties are not written (nor is the product priced) with the risk associated with a weapon system performance guarantee taken into account. Typically a design warranty that is offered applies only to the adequacy of the specific product's own design. Similarly, defects in workmanship and material relate to the product's performance characteristics as measured against its own defined performance standards.

This concludes our comments on the proposed DOD guidance relating to the new statutory warranty requirement. If we can be of further assistance, please let us know.

Respectfully,

CHARLES STEWART, *President.*

TRW INC.,
ELECTRONICS AND DEFENSE SECTOR,
February 17, 1984.

MR. RON BULMER
Office of the Deputy Under Secretary of Defense for Research and Engineering (Acquisition Management), The Pentagon, Washington, DC.

DEAR MR. BULMER: As a major defense contractor, TRW offers its comments on the Department of Defense "Draft Guidance on Written Guarantees," published in the Federal Register on January 20 (Vol. 49, No. 14, pp. 2502-06). Such Guidance relates to the pending effectiveness of Section 794 of the Department of Defense Appropriation Act, 1984 (Public Law 98-212), which states that no funds may be expended for a "weapon system" unless the contractors therefor provide specified written guarantees to the United States.

Candidly, we consider Section 794 to be one of the most counterproductive pieces of legislation in recent memory. It will seriously inhibit and complicate the negotiation of weapon system contracts. Moreover, it will not facilitate the prudent utilization of defense appropriations which its sponsors envision. We urge the Department of Defense to seek repeal of this law at the earliest practicable date.

Turning to the draft Guidance, we appreciate the difficulties inherent in construing Section 794 to achieve a workable and compliant procedure. Nevertheless, TRW submits that the proposed implementation is in several material respects overly broad, ambiguous and incomplete. Since it is acknowledged that Section 794 reverses long standing contracting policy and will necessitate a significant assumption

of risk by contractors, we consider it to be of critical importance that the Department of Defense not embellish or expand the statutory language.

Our views are presented generally in the order that the proposed Guidance is structured. New or revised contract language which we recommend is underlined for convenience.

We hope these inputs will prove constructive as you proceed to finalize your Guidance. If we can provide any additional assistance, please call upon us.

Sincerely yours,

GEORGE E. SOLOMON,
Executive Vice President and General Manager.

Enclosures: (1) Comments.

TRW COMMENTS ON DOD DRAFT GUIDANCE RE WEAPON SYSTEM GUARANTEES

1. *Definitions* (p. 2504)

(a) "Weapon System"

The definition stated embraces too much. Since the guarantee(s) will be obtained at the time of contracting, there is no reason to consider whether the equipment might be modifiable into a weapon system. The question is the intent of DoD when it decides on the particular procurement. Further, the last sentence of the draft Guidance lacks precision. In the same sense that it is helpful to include illustrations of what is covered, it is equally useful to indicate when guarantees are not in order.

We urge a revision to the effect that:

> *A* "weapon system," is equipment which *is intended to be used or usable* directly by armed forces *of the United States* to carry out *military* combat missions. [Second sentence—no change] The term includes *computer* software, ordnance *and operational hardware, provided these are end items delivered pursuant to a specific weapon system procurement and are integral to satisfaction of the Government's performance requirements as specifically delineated. The term does not include equipment or components that may provide or be utilized for incidental or passive support to armed forces in carrying out combat missions.*

(b) "Component"

Again, the definition should make it clear that components are covered only when they are end items delivered pursuant to a specific weapon system procurement and are integral to satisfaction of the Government's performance requirements as specifically delineated. Inasmuch as there is extant authority for warranties in purchases of supplies (DAR 1-324.1-7, 7-105.7), it is logical to delimit "components" in this context to principal subsystems. Hence, spare parts do not qualify as weapon system components under any circumstances.

(c) "Procurement"

The definition should be narrowed to fit the exact statutory language and scope. Section 794 does not dictate guarantees in the instance of a direct contract with a subsystem contractor.

> A "procurement" is a direct contract between the government and a contractor for the production of a weapon system, irrespective of contract type. The term does not include *prototype or pilot production, services, studies, logistic support, concept definition, demonstration, validation, integration, technology, techniques, technical data, or research, development, test and evaluation effort funded by RDT&E appropriations.*

(d) "Specified performance requirement"

In keeping with the exclusionary wording incorporated in paragraph (h) of the model clause as drafted, another sentence should be inserted saying that

> *The term does not include performance characteristics, aspects or conditions that (i) are identified as goals or objectives, or (ii) are not delineated as mandatory performance requirements in determining the firm fixed price established for the particular contract guarantee(s).*

(f) "Bear the cost of"

For the sake of clarity and consistency with paragraph 9, the second sentence shold read:

> *The written guarantee(s) set forth in a contract for the production of a weapon system shall be identified by a separately priced firm fixed price, allocated as appropriate among the contract end items covered by the guarantee(s).*

(g) "At no cost to the government"

It is not clear from the draft wording how a contractor entering into a cost type contract can price in guarantee costs which would no longer be reimbursable under the Inspection of Supplies and Correction of Defects clause. (DAR 7-203.5) Since it is understood that a fixed sum in addition to the fixed fee will be included, it is suggested that a sentence be added—

> *In cost type contracts, a fixed amount in addition to any fee to be paid shall be negotiated and included in the contract as a separate firm fixed price for the guarantee(s).*

2. *Contract Awards* (p. 2504)

We question the equity and practicality of imposing the guarantee requirements upon preexisting contract arrangements, as ostensibly contemplated by subparagraphs (a), (b), (d) and (f). A contractor deserves to know when it enters into a contract that it will be obliged to grant guarantees, and that it can secure a supplemental payment which justifies undertaking the attendant risk. The retroactive forfeiture or infringement of a contractor's right to proceed on terms acceptable to it is unfair and violative of basic legal precepts. It is recommended that a waiver of the guarantee requirements be granted for these classes of contractual instruments which are outstanding as of March 14, 1984.

3. *Guarantee Clause* (pp. 2504-05)

The words "or components thereof" in the introductory statement should be deleted. With respect to subparagraph (b), we believe that the concept of reasonableness should be made explicit to preclude untoward leverage or penalties being exacted against a contractor.

> Guaranteeing that the contractor will bear the cost of all work to repair or replace such parts as *reasonably* necessary to achieve the *mandated* performance requirements and providing that, if the contactor fails to repair or replace parts *with reasonable promptness* as required by the contract, the contractor will reimburse the government for any *reasonable* costs incurred by the government in procuring such parts from another source.

4. *Model Clause* (p. 2505)

To assure predictability and uniformity whenever practicable, we think the model clause should be employed in all weapon system contracts except where a contracting officer determines that the interests of the government will not be adequately protected thereby. The distinction between "complex" and "less complex" is too fuzzy to furnish meaningful guidance to either contractors or contracting authorities.

5. *Performance Guarantees* (p. 2505)

Section 794 does not call for redesign of the weapon system in a worst case, only the redesign of defective parts. Redesign of the entire system would be in the nature of consequential damages. Paragraph 5 needs to be rewritten accordingly. The words "prototype or" in the seventh line of subparagraph (a) should be deleted. There should be written into subparagraphs (a) and (b) the same "reasonableness" caveats as noted in 3 above, *e.g.*, "with reasonable promptness", "reasonably conform." Additionally, subparagraph (b) begs the question of what is an appropriate time period for the effectiveness of a guarantee. We strongly feel the DoD should adopt responsible parameters for every contract so as to obviate subsequent attempts to secure prolonged commitments from the contractor.

6. *Freedom from Defects* (p. 2505)

Section 794 provides the remedy of repair or replacement for breach of either of the two types of guarantees. The draft terminology is overly expansive. Also, there is once more a lack of direction with regard to the length of time when the guarantee covering defects in materials and workmanship will be operable. The words "or components thereof" in the last sentence should be deleted.

8. *Duration of Guarantees* (p. 2505)

As previously noted, we do not agree that it is desirable to leave open for contract-by-contract resolution the time period during which guarantees will be in force. At the least, we think it is important to set a maximum duration for the application of each type of guarantee, with perhaps a proviso for an extended period of effectiveness if the contractor typically provides a longer warranty in its commercial sales of a substantially identical item. Since the cost to the government for guarantees will no doubt escalate disproportionately if the government seeks inordi-

nately lengthy protection, our judgment is that it will serve the interest of all parties to place sensible bounds on the life of the guarantees.

9. *Payment for Guarantee* (p. 2505)

This paragraph should be supplemented as follows:

Where otherwise appropriate, the firm fixed price of the guarantee(s) may be equitably adjusted in the event of changes to the contract, or where an overrun is experienced on a cost type contract.

10. *Negotiation of Contract* (p. 2505)

The allusion to "later dispute" in the first sentence is somewhat confusing. Since the firm fixed price of the guarantee(s) will be identified separately at the time of contracting, we think it is incumbent on the military departments to delineate—in every procurement in which they intend to demand guarantees—the specified performance requirements (contained in the contract specifications or in any other agreement relating to production of the weapon system) and contract end items to be covered thereby. If they fail to do so, and the contractor in turn does not negotiate a separate price for inclusion in the production contract, we do not see how there can be a later dispute on the subject.

11. *Voiding the Guarantee* (p. 2505)

We agree that future contracts should expressly enumerate the circumstances under which a guarantee shall be negated. However, the last sentence of this paragraph as drafted seems to infer that a contractor could be held to its guarantee even if it was slightly at fault, *e.g.*, nonconformance to a performance requirement or defective component where the cause of failure is determined to be primarily due to misuse, alteration, improper maintenance or other act or omission of government personnel. In light of the unique risk being transferred to contractors by Section 794, and the absence of control which the contractor has over weapon systems and components once delivered to the government, we deem it to be overreaching to bind the contractor when the government or other parties bear responsibility for the failure. In our opinion, fairness dictates the inclusion of contract language relieving the contractor under such circumstances. See paragraph (h) of the revised model clause below.

12. *Cost Effectiveness* (p. 2505)

While we have no comments on the text of this paragraph, we observe that over the long haul it will be counterproductive to the procurement process if the military departments drive competing contractors—by the threat that they will become price noncompetitive—to disregard or underprice the patent risk which they will be assuming by entering into these guarantees. A guarantee and its price ought not to be evaluation criteria for contract awards. It would be preferable to defer negotiation of guarantee and price terms until after selection of the otherwise successful offeror.

Further, assuming Section 794 remains on the books, we request the DoD to clarify its position on contractor insurance to ameliorate the contingent exposure flowing from guarantees. It may be far more cost effective as well as expedient to reimburse the expense of premiums for commercially available insurance than to have the contractor negotiate an adequate price cushion premised on the fear that the worst might happen on any given contract.

13. *Waiver* (p. 2506)

Albeit subparagraph (a) tracks the statutory phraseology, it is more correct grammatically to say that

> . . . the waiver is necessary in the interest of the national defense or *because a guarantee* would not be cost-effective.

It would be beneficial to supply examples of when it will be in the interest of the national defense to grant a waiver, *e.g.*, preserve competition, foster application of state-of-the-art technology. There also needs to be explicit recognition that guarantees will not be cost-effective in certain procurements where corrective work, repair or replacement are not feasible, *e.g.*, spacecraft and spacecraft payloads, situations where the contractor is not the designer of the weapon system.

14. *Model Clause* (p. 2506)

On the basis of the foregoing, we think the following modifications of the model clause are needed:

(a) [satisfactory as drafted, but correct spelling of "furnished"]:

(1) That *the weapon system* and each component thereof *being procured under this contract shall be* designed and manufactured so as to conform to performance requirements *specifically delineated in* this contract and all other *identi-*

fied supplementary agreements *entered into by the United States and the contractor* relating to the production under this contract of *the weapon system or component,* and

(2) That *the weapon system* and each component thereof *being procured under this contract shall be,* at the time of delivery, free from all defects in materials and workmanship which would cause the *weapon system* to fail to conform to the performance requirements *specifically delineated in* this contract and all other *identified* supplementary agreements *entered into by the United States and the contractor* relating to the production under this contract of *such weapon system;* provided, however, that with respect to government-furnished *or government-designed* property, the contractor's guarantee shall extend only to its proper installation so as not to degrade its performance and/or reliability, unless the contractor performs some modifications or other work on such property *and negotiates a firm fixed price of the guarantee applicable thereto,* in which case the contractor's *guarantee* shall extend to such modification or other work.

(b) In the event of a failure of *the weapon system or component* to meet the conditions specified in subparagraphs (a)(1) or (a)(2) above:

(1) The contractor will *with reasonable promptness* repair or replace such parts as are *reasonably* necessary to achieve the required performance requirements and the contractor shall bear all costs in connection therewith, or

(2) If the contractor fails to repair or replace such parts *with reasonable promptness,* as determined by the contracting officer, the contractor will pay the *reasonable* costs incurred by the government in procuring such parts from another source and in accomplishing *correction.*

(c) Delete this paragraph. No such requirement is set forth in Section 794.

(d) Delete this paragraph. Same comment as immediately above.

(e) Delete this paragraph. this would effectively give the government an alternate remedy if it chooses not to repair allegedly defective parts. If this election occurs, the guarantee becomes superfluous by action of the government. There is no rationale for penalizing the contractor in such an instance. Section 794 reflects no intent of Congress to allow the DoD to bargain on this point.

(c) [previously (f)] The contractor shall be notified in writing of any *nonconformance or defect in the weapon system* or component thereof subject to the guarantee*(s)* set forth in paragraph (a) above within *ten (10) business* days after discovery of *such nonconformance or defect, including all available information as to the mode or nature of the failure.* Upon election by the government of a remedy in accordance with paragraph (b) [delete (c)] above, the contractor will, notwithstanding any disagreement regarding the guarantee, comply with such direction. In the event it is later determined that *the nonconformance or defect* was not subject to the guarantee*(s)* set forth in paragraph (a) above, the contract price will be equitably adjusted.

(d) [previously (g)] [satisfactory as drafted]

(e) [previously (h)] For purposes of this clause, the term "performance requirements" means only those performance characteristics, *aspects or conditions* that are mandatory. The term does not include performance characteristics, *aspects or conditions* that are described as goals or objectives, *or that are not specifically identified in determining the firm fixed price of the contractor's guarantee(s).*

(f) [new] *For purposes of this clause, the term "components" means only those components which are identified in the contract as subject to a written guarantee, and for which a firm fixed price to the contractor is negotiated.*

(g) [new] *The guarantee(s) shall terminate ——— [days/years] after delivery of the weapon system to the government.*

(h) [new] *The guarantee(s) shall not apply when the nonconformance or defect is caused wholly or partially by acts or omissions of the government or third parties, or otherwise by causes beyond the contractor's reasonable control and without its fault or negligence.*

(i) [satisfactory as drafted]

HUGHES AIRCRAFT CO.
El Segundo, CA, February 20, 1984.

Hon. MARY ANN GILLEECE,
Deputy Under Secretary of Defense, Acquisition Management,
Room 2A330, The Pentagon, Washington, DC.

DEAR MS. GILLEECE: Hughes Aircraft Company (Hughes) submits the following comments on the Department of Defense (DoD) draft policy guidance on written guarantees.

The guarantee requirement enacted by Congress in Section 794 of the Defense Appropriations Act of 1984 arose from growing concern over highly publicized problems with military procurement including cost overruns, defective weapon systems and recent disclosures of exorbitant prices for spare parts. We are not unmindful of Congress's basic intent nor do we disagree in principle with what it is they seek to accomplish. Thus, we believe that repeal of Section 794 is unlikely in the near term and that DoD will have to implement Section 794, hopefully amended along practical lines by the Congress and interpreted by DoD policy guidelines that will be practical and achievable.

As proposed, the DoD policy guidance goes far beyond the legislative mandate and must be revised substantially in its final form in order to achieve a sensible regulatory requirement that can be responded to by the defense industry. Additionally, the proposed guidelines must recognize basic distinctions between the purchase of commercial items and the acquisition of sophisticated weapon systems. For example, commercial guarantees (e.g., on avionics, radios, etc.) are far more limited than the DoD guidelines would impose. First of all, commercial electronics involve more conservative designs with proven technology. The products are tested extensively by users over a period of time in the environment in which they will be used. Secondly, there are many exclusions . . . e.g., for accidents, misuse, improper maintenance, unauthorized replacement parts, etc.

Guarantees are not new to the defense business. They have been widely used by DoD in the past, but on a selective basis and then tailored to the type of product and operational environment. A blanket guarantee policy cannot be made to work. Hughes, for example, participates in the electronics segment of the defense industry. We cannot live with the same guarantee rules that might be appropriate for shipbuilding, vehicles, airframes, engines, etc. Each industry segment has its own product characteristic and varying potential for written guarantees. Even within an industry segment, it is not practical to impose a blanket warranty policy on all products. Hughes, as a defense electronics supplier, cannot accept a uniform guarantee requirement on each of its products. For example:

One extreme—satellites in orbit: An extremely benign environment. Rigorous warranties (i.e., in-orbit profit incentives) are both practical and are widely used. Note that in this case, each product is exhaustively tested and screened at great cost; this is not practical for high production tactical systems.

Another extreme—precision optical equipment (e.g., laser rangefinders, laser designators) for use on jeeps or in the field by the Army. Here, the environment is so variable (extreme shocks, temperature extremes, rough handling misuse) that guarantees (a priori for whole classes of equipment) are unacceptable and, in any case, not cost-effective.

"In the middle"—airborne radar, optical sensors, etc. A more controlled environment between the above two extremes. Here, for mature products, guarantees perhaps somewhat more limited than for analogous commercial equipment, are practical . . . and, in fact, are in fairly widespread use already.

One final, but very important, point. We conclude that the legislation calling for weapon system guarantees is intended to apply to *mature production equipment.* We reach that conclusion from a reasoned interpretation of the legislative language which limits the required guarantee remedy to repair or replacement of parts and thereby reveals the intent of Congress to apply guarantees only to "mature" weapon systems. By mature, we mean a system or subsystem that has gone entirely through full-scale development and initial production. Thus, we are talking about a product that is fully engineered, extensively tested and has sufficient field usage data on which to price a guarantee provision. Guarantees cost money. For mature products, the cost of the guarantee can be minimized because there is an adequate data base. For example, Hughes's TOW missile program has taken on stiffer fly-to-buy acceptance guarantees from one production year to the next over the past several years. We have been able to provide those increased guarantee requirements at reasonable costs to the Government because of the evolving maturity of the product and the cumulatively expanded performance data base. Another example is our F-18 radar system. We have reduced the price of our failure-free guarantee with each produc-

tion buy because of product maturity and the system's ability to pass increased MTBF acceptance test specifications. In some cases, an adequate data base may demonstrate that a guarantee is either not feasible or not cost effective. Finally, we conclude that the guarantee requirement should be limited to *firm fixed-price* contracts because that is the appropriate type contract for full-scale production of mature systems or subsystems.

We have prepared and attached suggested revisions to the DoD draft policy guidelines and model clause which address the following areas:

definition of a "production contract" as a full scale production of *mature* defense products;

limiting guarantees to firm fixed-price contracts;

the consolidation of "specified performance requirements" in one section of a contract;

limitation of guarantee remedies to repair or replacement of parts as specifically required by the Act;

exclusions to the model clause consistent with commercial-type guarantees;

application of the guarantees clause to new contracts awarded after 14 March 1984.

Hughes believes that the foregoing suggested revisions are reasonable, consistent with the law and reflect the way the Government acquires and uses weapon systems. We further believe the revisions will satisfactorily overcome the concerns of Congress as heretofore expressed and will lessen the fears of the DoD in the areas of cost increases, technology innovation, and stretch-out of programs. It is our position that anything less will have serious counterproductive effects on mission accomplishment, product suitability and effective competition.

I will be pleased to discuss these suggested policy revisions with you personally or if you should have any questions, I can be contacted by telephone at (213) 414-7808.

Sincerely,

MALCOLM R. CURRIE.

POLICY GUIDANCE

Section 794 of the Department of Defense Appropriations Act, 1984 requires that written guarantees be obtained in connection with the procurement of weapon systems. This guidance is issued to provide for implementation of Section 794. It sets forth the policy and procedures for requiring and obtaining such guarantees at the weapon system and/or component level. To the extent this guidance may be inconsistent with the provisions of DAR 1-324, this regulation shall control.

1. DEFINITIONS

For purposes of this guidance:

(a) "Weapon System" is equipment which, without substantial modification, is or can be used directly by armed forces to carry out combat missions. By way of illustration, the term includes bombers, fighter aircraft, attack helicopters, combat naval vessels, strategic and tactical missiles, tanks, combat vehicles, small arms, torpedoes, bombs and artillery. The term includes software, ordinance, related support equipment such as, ground handling equipment, training devices, test equipment and accessories thereto [1.], *but excludes therefrom technical data.*

(b) A "component" is an assembly or any combination of parts, subassemblies and assemblies mounted together in manufacture, assembly, maintenance, or rebuild. Spare parts, per se, are not deemed components unless otherwise fitting this definition.

(c) A "procurement" is a direct *firm fixed price production* contract between the government and a contractor for the production of a weapon system and/or components thereof [irrespective of contract type.]

(d) A "specified performance requirement" is any specifically delineated mandatory performance requirement set forth [anywhere] in a *specified section of a* government production contract for a weapon system [or in any other agreement relating to the production of such system incorporated or referenced in such contract].

(e) "Conform" means designed and manufactured so as to meet or achieve, or both, the government's specified performance requirement.

(f) "Bear the cost of" means at no increase in *the firm fixed price of the* contract [price irrespective of contract type]. The written guarantees set forth in a contract award for the production of a weapon system shall be a separately priced firm fixed price line item.

(g) "At no cost to the government" means that the costs will not be reimbursed the contractor directly or indirectly under the production contract for the weapon

system or any other government contract (except for the firm fixed price guarantee line item).

(h) "Production contract" means a procurement of option for full-scale production of a weapon system and/or components thereof and does not include contracts for manufacture of prototype or low-rate or initial production in which manufacturing capability or capacity for full-sale production has not been demonstrated. Sustaining engineering charges are not included in the separately priced guarantee line item.

2. This guidance applies only to contract awards made subsequent to March 14, 1984.

For purposes of this guidance:

(a) A modification to a contract to add additional quantities *does not* constitute [s] a contract award.

(b) The exercise of a priced production option even where no further definition or negotiation of terms is required *does not* constitute [s] a contract award.

(c) The notice to proceed with quantities after the first year quantity in a multi-year procurement *does not* constitute a contract award.

(d) The placement of an order under a basic agreement or basic ordering agreement constitutes a contract award. *However, the basic agreement or basic ordering agreement must contain a guarantee clause in order to be applicable to individual orders.*

(e) The definitization of an existing redeterminable contract *does not* constitute a new award.

(f) The definitization of a letter contract *does not* constitute a contract award.

3. Except to the extent otherwise provided herein, all government *firm fixed price* contracts for the production of a weapon system or components thereof shall contain a clause;

(a) Guaranteeing that the weapon system and each component thereof were designed and manufactured so as to conform to the government's specified performance requirements and that, at the time of delivery to the government, the weapon system and each component thereof are free from such defects in materials and workmanship as would cause the system to fail to conform to the government's specified performance requirements delineated in the contract.

(b) Guaranteeing that the contractor will bear the cost of all work promptly to repair or replace such parts as are necessary to achieve the [required] *specified* performance requirements and providing that if the contractor fails to repair or replace parts promptly as required by the contract, the contractor will reimburse the government for [any] cost incurred by the government in procuring such parts from another source.

4. A model clause that may be used for this purpose in contracts for less complex weapon systems is attached. For complex systems, where different types of requirements (see paragraph 5) are present, special guarantee clauses may be written.

5. [The written guarantees called for herein] *After acceptance of the production unit specified performance requirements* pertaining to *written guarantees of* design and manufacture [so as to conform to the government's specified performance requirements] will *generally* be of *either or both of* two types:

(a) Where the specified performance requirement(s) is a test or demonstration and the requirement(s) is deemed to be satisfied upon the satisfactory completion of the specified test or demonstration [, e.g.,] of [a first prototype or] *the* production unit, the guarantee shall provide that, in the event of a failure of a weapon system or component to complete satisfactorily the specified test or demonstration, the contractor shall promptly perform all [design and manufacture work] *work to repair or replace parts* as necessary to conform to the government's specified performance requirements at no increase in contract price and at no cost to the government[. and to complete satisfactorily the specified test or demonstration at no increase in contract price].

(b) Where the specified performance requirement(s) consists of the operation of the system without designated failures for a specified period or interval, the guarantee shall, at a minimum, provide that, in the event of a failure of a weapon system or component thereof within the stipulated period to meet the designated performance requirement(s), the contractor shall promptly, at no increase in contract price and at no cost to the government, perform all work to [(1) design and manufacture the system and each component thereof so as to conform to the government's specified performance requirements as specifically delineated and/or (2)] repair [and/] or replace such parts as necessary, to meet the designated performance requirement at no increase in contract price and at no cost to the government.

6. In contracts for weapon systems, however, there are *two* types of guarantees: One for performance to insure conformity of design and manufacture to specifically

delineated performance requirements (as set forth above); and, one for freedom from *all* defects in materials and workmanship which would cause the system not to achieve the specified performance requirements. The latter is a separate and distinct guarantee provision which would attach to *all specifically guaranteed* delivered end items under the weapon system contract for a specified period of time. These guarantees are not mutually exclusive and *both* will be contained within a single contract for a weapon system or components thereof.

7. Consistent with the policy stated in DAR 1-324, the contract may provide such *additional* warranty protection and remedies thereof as may be deemed appropriate by the government in the circumstances.

8. The duration of the written guarantee shall be tailored, as appropriate, to the specific contract award. The duration of the written guarantee(s) within any given contract award *need not be the same for all specified performance requirements.*

9. Payment for the written guarantee shall be made on a pro-rate basis at time of delivery of the contract end items covered by the guarantee.

10. During negotiations of a proposed contract, care must be taken to identify firm and/or prescribed performance requirements that have been included in the specifications and other relevant documents in order to avoid subsequent dispute. These performance requirements should be reviewed to assure that they are realistic and achievable and that the performance requirements specified in the contract accurately reflect the needs for the weapon system. Unless otherwise indicated by the government, *all* specified performance requirements fall under the performance guarantee(s). In the event it should be determined that a written guarantee at the weapon system level is not cost-effective or otherwise not in the interest of the national defense, the identification and examination of appropriate components of the weapon system for applicability of a written guarantee(s) is also required. This examination should include a review of individual performance parameters (such as durability) for application of a written guarantee if comprehensive coverage is determined to be infeasible.

11. [During negotiation of the contract, each circumstance(s) that could have the effect of voiding the guarantee should be identified and specifically delineated in the contract. For example, if the guarantee would be voided, in whole or in part, by the subsequent incorporation of spare parts that were not predetermined to be a duplicate of the replaced part, this should be the subject of negotiation. Contracting officers should not agree that any circumstance(s) will void the guarantee unless the relationship between the circumstance(s) and the performance requirements is direct and the circumstance(s) identified as voiding the warranty is beyond the control of and not attributable to any fault of the contractor.] *The written guarantees called for hearin (i) shall not apply to defects or circumstances which are beyond the control of and not attributable to any fault of the contractor, (ii) shall not apply to contracts in which the contractor did not design the weapon system or component(s), (iii) shall not apply to designers of the weapon system or component unless the designer is supplying the weapon system or component, (iv) shall exclude implied warranties of merchantability or "fitness for a particular purpose" and, (v) shall not include contractor liability for consequential, incidental or special damages.*

12. The firm fixed price of the guarantee(s) should be separately identified. In order to facilitate the identification of the cost of the guarantee, it shall be set forth in the *production* contract as a separate line item.

(a) In determining whether use of a guarantee is cost effective to the government, the benefits to be derived from the guarantee must be related to the costs of the guarantee to the government. Guarantee costs arise from the contractor's charge for accepting the deferred liability creatsed by the guarantee and from the government's administration and enforcement of the guarantee. In most cases, contractors will quote a higher price to provide the guarantee. Competition will be a major factor in the price quoted by the contractor to the government for the guarantee. In addition, the experience of the contractor in producing the item is another major factor in the cost of the guarantee since it may rely on an actuarial basis to assess financial risk. As a further consideration, the estimated cost to the government for correction or replacement by the contractor, by another source, or by the government, in the absence of a guarantee, should be compared to the guarantee costs considered above.

(b) There are other factors which must be considered in determining whether the guarantee is cost effective such as any indirect costs to the Government necessary to maintain the guarantee in effect. For example, if certain spare parts must be purchased only from designated suppliers in order to keep the guarantee in effect, the estimate of the loss to the government attributable to this limitation on competition

should be estimated. By way of a second example, the effect on breakout and competitive procurement of weapon system components should be considered.

13. The waiver authority granted in Subsection 794(c) is hereby delegated to the Secretaries of the Army, Navy and Air Force and to the Directors of Defense agencies with authority to redelegate not below the level of the Vice or Assistant Commander of a Major Command or the Assistant Director of a Defense Agency. Class waivers for specific programs may be granted, where justified. Class waivers may not be approved below the level of the Assistant Secretary of the Military Department or the Director of a Defense Agency. A written record will be kept of each waiver granted, together with supporting documentation, to meet the reporting requirements to the Congress. A waiver of the guarantee requirements in whole or in part set forth above must be:

(a) Supported by a written determination that the waiver is necessary in the interest of the national defense or would not be cost-effective.

(b) An intention to waiver such requirements must be forwarded to the committees on Armed Services and Appropriations of the Senate and the House of Representatives in writing, including in the notice an explanation of the reasons for the waiver(s).

(c) Notification of all class waivers will be sent to the DoD Acquisition Executive.

14. This guidance is effective immediately [/] *in accordance with paragraph 2. above.*

Attachment.

Guarantee

(a) Notwithstanding inspection and acceptance by the government of supplies furnished under this contract or any provision of this contract concerning the conclusiveness thereof, the contractor guarantees:

(1) For the duration(s) set forth in Section of this contract,

[(1)] *(2)* That line item and each component thereof are designed and manufactured so as conform to the performance requirements *set forth in section* of this contract [and all other supplementary agreements relating to the production under this contract of line item entered into by the United States and the contractor.] and;

[(2)] *(3)* That line item and each component thereof, at the time of delivery, are free from all defects in materials and workmanship which would cause the line item to fail to conform to the *specified* performance requirements of this contract [and all other supplementary agreements relating to the production under this contract of line item entered into by the United States and the contractor]; *provided, however,* That with respect to government-furnished property the contractor's guarantee shall extend only to its proper installation so as not to degrade its performance and/or reliability, unless the contractor performs some modification or other work on such property, in which case the contractor's warranty shall extend *only* to such modification or other work.

(b) In the event of a failure of line item to meet the conditions specified in subparagraphs (a)(1) or (a)(2) above:

(1) The contractor will *bear the cost of all work* promptly *to* repair or replace such parts as are necessary to achieve the required performance requirements [and the contractor shall bear all costs in connection therewith], or

(2) If the contractor fails to repair or replace such parts promptly, as determined by the contracting officer, the contractor will pay the costs incurred by the government in procuring such parts from another source [and in accomplishing the repair.

[The contractor will also prepare and furnish to the government data and reports applicable to any correction required under this clause (including revision and updating of all affected data called for under this contract) at no increase in contract price or cost to the government.

[(d) When items covered under the guarantee are returned to the contractor, in pursuance to this clause, the contractor will bear the transportation costs from the place of delivery specified in the contract (irrespective of the f.o.b. point or point of acceptance) to the contractor's plant and return.

[(e) If the government determines that it does not require repair or replacement of defective or nonconforming supplies, the government shall be entitled to an equitable adjustment in the price of such supplies.]

[(f)] *(c)* The contractor shall be notified in writing *by the contracting officer* of any failure of line item or any component thereof subject to the guarantee set forth in paragraph (a) above within days after discovery of the failure. Upon elec-

tion by the government of a remedy in accordance with paragraph (b) or (c) above, the contractor will, notwithstanding any disagreement regarding the guarantee, comply with such direction. In the event it is later determined that the failure was not subject to the guarantee set forth in paragraph (a) above, the contract price will be equitably adjusted.

[(g)] *(d)* The guarantee provisions of this clause do not apply to combat damage. *The guarantee also does not apply to defects or circumstances which are beyond the control of and not attributable to any fault of the contractor. This guarantee specifically excludes all implied warranties of merchantability or "fitness for a particular purpose." The contractor shall not be liable hereunder for consequential, incidental or special damages.*

[(h)] *(e)* For purposes of this clause, the term "performance requirements" means only those performance characteristics that are mandatory *and specified as covered by warranty in one section of this contract.* The term "performance requirements" does not include performance characteristics that are described as goals or objectives.

[(i)] *(f)* The rights and remedies of the Government provided in this clause are in addition to, and do not limit, any rights the government may have under any other clause of the contract. Disputes arising under this clause will be resolved in accordance with the clause of this contract entitled Disputes.

Rationale

The definition of the term "weapon system" is clarified to exclude "technical data." The clarification is compatible with the preent DOD "Warranty of Technical Data" provision at DAR 7-104.9(o). The clarification is also consistent with the coverage of existing DAR warranty clauses for supplies which specifically exclude warranty of "technical data" (DAR 7-105.7(i)).

The proposed change makes the written guarantees apply only to firm fixed price contracts and to make the guarantees policy consistent with the DAR policy concerning proper use of contract type. In drafting Subsection 794(c) pertaining to waivers, Congress must have recognized that is would be impossible for the Government to determine whether inclusion of the fixed price performance guarantees would be "cost-effective" unless these fixed priced guarantees were susceptible to costing and pricing with some degree of accuracy. The actuarial base necessary to do this is only available after volume production of a product. Award of either a cost reimbursement or a flexibly priced contract is only justifiable before volume production has occurred since the DAR rationale for use of such contracts is the inability to cost and price with reasonable accuracy. Therefore, inclusion of the performance guarantees as a fixed price line item in other than firm fixed price contracts would be contrary to existing DAR policy and logically compel a Secretarial determination that the written guarantees would not be cost-effective. Thus, the written guarantees mandated by Section 794 should only apply to firm fixed price contracts.

The additions and deletions are to avoid ambiguity. Words or phrases such as "any," "anywhere," "referenced," "any other agreement" and "all other supplementary agreements relating to . . ." are much too broad to reasonably circumscribe the performance requirements, costs and delivered end items intended to be covered by the contract guarantee. The phrases, "specified section" "specified performance" and "specifically guaranteed" are substituted to make clear that guaranteed performance requirements, deliverables, etc., must be delineated in a particular section of the contract.

Subsections 794(a)(1) and 794(a)(2) limit the application of the mandatory guarantee to "production contracts." The proposed definition of the term "production contract" limits application of the mandatory guarantee to weapons systems and/or components thereof which are the products of *full-scale production.* This definition is consistent with the rationale set forth in 2 above and is consistent with the statutory remedy for failure to satisfy performance requirements. That remedy is limited to parts repair or replacement. Congress must have intended that the guarantees would only apply to systems resulting from full scale production; systems which were already fully developed, tested and qualified so that performance failures would likely result only from improperly built parts.

The proposed DOD Policy Guidance goes beyond the legislative requirement which provides that, "The requirements for written guarantees . . . apply only to contracts which are awarded after date of enactment of this Act . . ." Standing alone, a "modification" is not a contract; a follow-on "option" is not a contract; and a "definitization" is not a contract. Each will become an amendment to a previously awarded contract. Thus, if the previously awarded contract predates the effectivity

of the "guarantees" requirement, any related modification, option exercise or definitization should be similarly construed to predate the effective date.

DOD can, by Regulation, make the "guarantees" requirement applicable to modifications, option exercise or definitization predating the effective date. However, if it chooses to do so, it must accept the consequences of schedule stretch-outs, price increases and general inefficiencies from disrupting the continuity of the work force while negotiations are reopened to incorporate guarantees provisions.

The remedy provided by the statute for failure to satisfy performance requirements is to "bear the cost of all work promptly to repair or replace such parts as are necessary to achieve the performance requirements." The limitation of this remedy to parts repair or replacement reveals the intent of Congress to apply the guarantee only to fully mature systems. Thus, unlike the DOD Draft Guidance, Congress did not intend the guarantees to cover, among others, redesign, redevelopment, retest, retrofit and transportation. The draft guidance and the model guarantee clause have been modified to conform to the statutory remedy.

It is a practical impossibility for the contracting parties to identify and delineate every possible circumstance which could have the effect of voiding the guarantee. As written, the policy and model clause give only the Government the opportunity to examine, consider and agree to each circumstance that will void the contract guarantee. The contractor, however, cannot foresee every possible circumstance that could occur and is, therefore, restricted in its ability to protect its interests in the negotiation of the guarantee. Thus, the contractor must limit its liability to exclude undefined circumstances which are beyond his control and not attributable to its fault or negligence. The exclusion of implied warranties of merchantability or "fitness for a particular purpose" is provided for in the standard DAR warranty of supplies clause (see DAR 7-105.7(i)).

Absence of a specific guarantee duration in the model clause could be interpreted at the working level as prohibiting such a provision. In order to be consistent with paragraph 8 of the proposed policy guidance and to avoid misunderstandings, specific language regarding duration of the guarantee should be included in the model clause.

[Western Union Mailgram]

COSTA MESA, CA, *February 20, 1984.*

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING,
Washington, DC.

DEAR SIR: I wish to make you aware of our feeling regarding the FY84 DOD Appropriation Act, in particular the guarantee project section (section 794) MSC has been a manufacturer of standard as well as specialized electro-mechanical components for the military/aerospace industry for over 35 years. During that time we have designed and manufactured many specialized components for use in the various weapon sustems produced in the U.S. Our position has always been that of a subcontractor to the prime contractor. All of our specification designs meet the mutually agreed upon performance criteria set forth by the prime contractor in the form of a product specifications and then agreed to by our engineering department. We would not be able to stay in business if the prime contractor would have the right to change its performance characteristics on a unilateral basis and then expect our product to function to this new environment. MSC would immediately negate any warranty of performance compromised in this way.

MSC considers itself to be a high quality manufacturer of electro-mechanical components and does stand behind its warranty position as any other qualified conscientious corporation would do. However, we cannot put ourselves into a position of guaranteeing product reliability and performance when we are not confident that the design specification originally agreed to will remain in force. I doubt whether any other manufacturing companies that I am familiar with would agree with this type of requirement.

Should you wish to pursue our position in this matter, I would be most happy to do so at your request.

Respectfully submitted,

ALAN D. MARGULIS,
Master Specialties Co.

INDUSTRIAL DRIVES DIVISION
Radford, VA, February 21, 1984.

OFFICE OF THE SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING,
The Pentagon, Room 2A330, Washington, DC.

GENTLEMEN: As a military subcontractor, I wish to express our concerns regarding implementation of guarantee requirements of Section 794 1984 DOD Appropriations Act.

1. Subcontractors should not be expected to guarantee designs which were specified by the government or prime contractor. Such designs are also subject to incessant revision and redesign which also is not in the subcontractor's control. Further guidelines and clarification are needed in this area.
2. Additional clarification is also needed in the area of spare parts "Breakout" program with particular definization of the contractor's responsibility for performance of guaranteed items.
3. Additional record keeping required of contractors will both delay and increase the cost of contracts in the future.
4. Administrative costs for follow-up on disputes between the government and contractors will surely cause additional costs to the government.
5. We believe that our stated and implied guarantees of products we produce are more than adequate for prime contractor and government protection in their use of Industrial Drives products.

As a producer of high quality, high technology components for weapons systems, we cannot see the need for additional costs to be added to the taxpayer to support the already burdensome military procurement system. It is within the realm of your department to simplify or eliminate many of the costly aspects of this proposed implementation. Please carefully consider the impact that implementation of this act can have.

Very truly yours,

W.W. GRIGGS.

AMERICAN ELECTRONICS ASSOCIATION,
GOVERNMENT OPERATIONS OFFICE,
Washington, DC, February 21, 1984.

Hon. MARY ANN GILLEECE,
Deputy Under Secretary of Defense, Acquisition Management,
Room 3E144, The Pentagon, Washington, DC.

DEAR MS. GILLEECE: The American Electronics Association (AEA) has reviewed the proposed Department of Defense (DoD) implementation of Section 749 of the FY 1984 DOD Appropriations Act, and our comments are provided in response to the notice set forth in the Federal Register on Friday, January 20, 1984.

These comments should not be construed as the AEA's endorsement of the legislation involved. We believe Section 794 of the FY 1984 DoD Appropriations Act is ambiguously drafted, does not correspond with the usual "commercial" warranty, and disrupts the existing and balanced warranty policy presently set forth in the DAR without corresponding benefit to the Government. Under the now mandatory warranty clause, we anticipate that procurement costs will increase as contractors and subcontractors alike will have to include costs to protect themselves against warranty risk when, in many instances, the Government is already adequately protected (through performance incentives or standard DAR clauses) from the risks associated with warranty coverage. Nevertheless, we offer the attached comments for consideration.

Very truly yours,

KENNETH C.O. HAGERTY,
Vice President, Government Operations.

[Enclosures.]

COMMENTS TO PROPOSED GUARANTY GUIDANCE TO IMPLMENT SECTION 794 OF THE DOD APPROPRIATIONS ACT FOR FY 1984 (FEDERAL REGISTER, JANUARY 20, 1984)

I. General Comments

The draft guidance issued for implementation of Section 794 does not take into consideration the role of performance incentives in "warranting" the performance of a weapon system. The guidance should allow a determination to be made, at no higher than one level above the Contracting Officer, to substitute the contract performance incentives for the warranty requirements or for the warranty remedies of

repair, replacement or reimbursement based upon a finding that these performance incentives would be as effective as the inclusion of warranty provisions. This could be made on the basis of a blanket determination accomplished prior to publishing the policy guidance and incorporated into such guidance. It might also be questioned, on a blanket basis, whether a warranty is proper at all for a weapon system, such as a missile, that is an expendable product and thus is not usually susceptible to return or rework in the event of failure.

II. Specific Comments

1. (a) Reference 1(a)

(b) Comment: Revise the last sentence to state "the term excludes software, ground handing equipment, test equipment or other equipment that is not incorporated as a physical part of the weapon system."

(c) Rationale: The guidance proposed appears to be broader than required by the legislation involved, which pertains only to a weapon system and not to equipment supporting that weapon system. The Contracting Officer would continue to have discretion under current DAR guidelines to determine whether or not it is appropriate or cost effective to seek additional warranty protection for equipment used in supporting the weapon system.

2. (a) Reference: 1(c)

(b) Comment: Revise by adding as the last sentence "A procurement shall not include a contract for a weapon system which contains performance incentives where it is determined at one level above the Contracting Officer that such incentives are as effective as warranty provisions in assuring the Government's performance objectives are met. A procurement shall not include a weapon system procured by the U.S. Government for sale to a foreign government."

(c) Rationale: See general comments above. With respect to the second sentence, there is no reason for the United States to require warranties for weapon systems sold to foreign governments unless such is requested by the foreign government involved.

3. (a) Reference: 1(d) and 10, second sentence

(b) Comment: Add as the last sentence to 1(d) "and specifically identified or included in one provision of such contract as subject to the written guarantee of such contract." Delete second sentence in 10.

(c) Rationale: Allowing performance requirements to be spread throughout the contract, especially in a large program, will greatly increase administrative effort. Although it is the intention of the statute that any performance requirements be covered, good administration dictates that such requirements be set forth in one place. Failure to do so will not only lead to disputes but can result in a situation where a Contractor is unsure as to what requirements it must price and the Government will not know what it has purchased. This is particularly true with the "specification tree" which results from incorporation or reference in most contracts. It is extremely important that the parties clearly understand exactly to what aspects of the product the warranty will apply. This can best be accomplished by identifying or including all specified performance requirements in one provision (doing so will also support the instructions in Paragraph 10 of the proposed guidance).

4. (a) Reference: 2(b)

(b) Comment: Delete "even where no" and substitute "only where" in the first line.

(c) Rationale: The inclusion of a priced production option under the coverage of the legislation even in situations where no further definition or negotiation of terms is required appears to exceed its requirements. An option is a legally binding contract which can be enforced. If such option agreement was entered into prior to March 14, 1984, and requires no further negotiations to definitize, it is inappropriate and counterproductive to require what is, in effect, a bargain to be renegotiated to include a new warranty provision. In fact, such negotiation might make it impossible to exercise a warranty in a timely fashion.

5. (a) Reference: 2(f)

(b) Comment: Add to end of sentence "except where such letter Contract as entered into on or before March 14, 1984, in the opinion of a person one level above the Contracting Officer, represents substantial negotiation of the definitized agreement."

(c) Rationale: Letter Contracts in many instances represent substantial negotiation of the definitive agreement. It would not be effective from either a cost or programmatic point of view to, in effect, require the renegotiation of contracts to include warranty provisions where they are substantially priced and agreed upon and such a result does not seem to be required by the legislation.

6. (a) Reference: 6. line 4
(b) Comment: Add "at time of delivery" after "workmanship."
(c) Rationale: This change incorporates the intent of the legislation which pertains to defects existing at the time a weapon system or component is "provided" to the United States.
7. (a) Reference: Model Guarantee
(b) Comment: Please see attached revisions (revisions underlined).
(c) Rationale: The model guarantee clause as drafted in many instances exceeds the requirements of the Act and does not cover areas normally a part of a standard warranty. The revisions in (a)(1) and (a)(2) and (h) reflect the definition of "Specified Performance Requirements" set forth in the guidance and also our suggestion that all such requirements be incorporated in one provision. Paragraph a.2. has also been revised to add a definition of defect as no definition has been provided. Paragraph (b)(1) has been revised to clarify the clause to provide that only the defective part need be replaced. The revision relative to (d) is a minor clarification. The revision to add Paragraph (i) recognizes the guidance in Paragraph (8) that the warranty will be effective for a specified period of time. Additionally, a standard disclaimer has been added as Paragraph (j) to clearly limit and delineate the contractor's liability for non-defective parts by excluding incidental and consequential damages and parts provided by the Government.

GUARANTEE

(a) Notwithstanding inspection and acceptance by the Government of supplies furnished under this contract or any provision of this contract concerning the conclusiveness thereof, the contractor guarantees:
(1) That line item and each component thereof are designed and manufactured so as to conform to the *specified* performance requirements of this contract and all other supplementary agreements set forth in relating to the production under this contract of line item entered into by the United States and the contractor, and
(2) That line item and each component thereof, at the time of delivery are free from all defects in materials and workmanship which would cause the line item to fail to conform to the *specified* performance requirements of this contract and all other supplementary agreements set forth in relating to the production under this contract of line item entered into by the United States and the contractor; *provided, however,* That with respect to Governor-furnished property the contractor's guarantee shall extend only to its proper installation so as not to degrade its performance and/or reliability, unless the contractor performs some modification or other work on such property, in which case the contractor's warranty shall extend to such modification or other work. *Defect as used in this guarantee means the breakage, malfunction or damage to a part or component rendering it unserviceable for any reason within the contractor's control. The term defect does not include the foregoing with respect to a part or component which by its nature is customarily replaced at routine inspections or maintenance.*
(b) In the event of a failure of line item to meet the conditions specified in subparagraph (a)(1) or (a)(2) above:
(1) The contractor will promptly repair or replace such *defective* parts as are necessary to achieve the required performance requirements and the contractor shall bear all costs in connection therewith, or
(2) If the contractor fails to repair or replace such parts promptly, as determined by the contracting officer, the contractor will pay the costs incurred by the Government in procuring such parts from another source and in accomplishing the repair.
(c) The contractor will also prepare and furnish to the Government data and reports applicable to any correction required under this clause (including revision and updating of all affected data called for under this contact) at no increase in contract price or cost to the Government.
(d) When items covered under the guarantee are returned to the contractor, in pursuance to this clause, the contractor will bear the transportation costs *not to exceed those reasonably incurred* from the price of delivery specified in the contract (irrespective of the f.o.b. point or point of acceptance) to the contractor's plant and return.
(e) If the Government determines that it does not require repair or replacement of defective or nonconforming supplies, the Government shall be entitled to an equitable adjustment in the price of such supplies.
(f) The contractor shall be notified in writing of any failure of line item or any component thereof subject to the guarantee set forth in paragraph (a) above within—days after discovery of the failure. Upon election by the Government of a

remedy in accordance with paragraph (b) or (c) above, the contractor will, notwithstanding any disagreement regarding the guarantee, comply with such direction. In the event it is later determined that the failure was not subject to the guarantee set forth in paragraph (a) above, the contract price will be equitably adjusted.

(g) The guarantee provisions of this clause do not apply to combat damage.

(h) For purposes of this clause, the term *"specified* performance requirements" means only those performance characteristics that are mandatory and are identified as such in the contract as set forth in . The term *"specified* performance requirements" does not include performance characteristics that are described as goals or objectives.

(i) *This guarantee shall be valid for a period of after the time of delivery of the nonconforming part to the government. The time of delivery means the date of execution of the acceptance block on a DD Form 250 or any other similar form evidencing delivery by a government representative authorized to sign the form.*

(j) *This clause shall not apply to any item which has been subject to misuse, neglience or accident, which shall have been altered or repaired by other than the contractor in any way which in the contractor's responsible judgment might affect its responsibilities under this clause, nor shall it apply to any component or part thereof which has been furnished by the Government to a contractor. This performance guarantee is expressly in lieu of any and all other guarantees or warranties including any implied warranty of merchantability or fitness for a particular purpose, whether written, oral, expressed, implied or statutory and any other obligation or liability (including tort liability) on the part of the contractor whether under this contract, or at law. Under no circumstances shall contractor be liable for any incidental, special or consequential damage expense for any reason whatsoever.*

(k) The rights and remedies of the Government provided in this clause are in addition to, and do not limit, any rights the Government may have under any other clause of the contract. *However, the rights and remedies granted to the Government herein shall not be construed to otherwise increase the liability of the contractor where other clauses in this contract relieve the contractor from liability of loss, damage or destruction to Government property, except with respect to the specific part which is defective.* Disputes arising under this clause will be resolved in accordance with the clause of this contract entitled Disputes.

McNally Industries, Inc.
Grantsburg, WI, February 21, 1984.

Office of the Deputy Under Secretary of Defense for Research and Engineering (Acquisition Management),
The Pentagon, Room 2A330 Washington, DC.

Dear Sir: The guarantee requirements of section 794 of the 1984 *DOD* appropriations act places the suppliers of components, sub-assemblies and assemblies in an extremely awkward position. It seems to indicate that the supplier subject to guarantee requirements would be forced to assume responsibility and extra costs for actions over which he has no control, namely guaranteeing the design and function of the components, assembly or sub-assembly without responsibility for design.

At present the supplier is responsible that the component, assembly or sub-assembly will meet the drawing, specification and test requirements as stated by the government in their bid package. It is not feasible for a supplier to guarantee anything other than material, workmanship, accuracy and quality as specificed.

Why introduce the necessity for more paper, additional costs, and price increases while accomplishing nothing? The requirement will force small business vendors to re-evaluate the decision to do business with the Government.

Sincerely,

Albert L. Scheideler,
President.

The Boeing Co.,
Seattle, WA, February 21, 1984.

Hon. Mary Ann Gilleece,
Deputy Under Secretary of Defense for Research and Engineering (Acquisition Management),
The Pentagon, Room 2A330 Washington, DC.

Dear Ms. Gilleece: The Boeing Company is pleased to respond to your request for comments regarding the proposed implementation of Section 794 of the 1984 DOD

Appropriations Act requiring guarantees in all newly awarded contracts for weapon systems or components.

Boeing endorses the comments set forth in the letter of the Council of Defense and Space Industry Associations (CODSIA), dated February 21, 1984, addressed to you, responding to DOD's proposed implementation of Section 794.

Boeing asserts emphatically its willingness to provide appropriate warranty coverage for all its products, military and non-military alike. The real issue raised by Section 794 is not whether DOD weapon systems should be guaranteed, but whether the acquisition process should be fundamentally and immediately changed to conform to commercial practices.

To make this position known to DOD, Congress and the taxpayers, and at the same time to help provide a perspective for evaluation of Section 794, Boeing has today released the following statement to interested Congressional delegations and to the Armed Services and Appropriation Committees:

"BOEING POSITION ON WEAPON SYSTEM WARRANTIES"

Boeing is strongly in favor of warranties. In fact, the Company's record in providing and administering warranties for its commercial jets is unsurpassed.

New legislation, such as Section 794, that subjects military production to more demanding standards than now exist in the commercial marketplace involves questions of far reaching impact. Such legislation raises issues of whether the government can conform to across the broad commercial practices in its defense procurements, and whether the adoption of such practices for all procurements would further the national interest. For example, under commercial practices the contractor controls design, development and testing. In weapon systems development the DOD controls these areas, because it sets the requirements. Section 794 also raises questions of conflict between the requirements of the legislation and other national goals, such as the strategy of maintaining technological superiority, encouragement of small business participation, expansion of competition and control of defense cots.

Prior to the enactment of Section 794 of the FY 84 Defense Appropriations Act bill, DOD had the authority under laws and existing regulations to require comprehensive warranties in all instances where it would be in the national interest and all of Boeing's present military contracts contain various forms of warranty.

Boeing recommends that legislation imposing warranties upon DOD contracts be deferred until the full implications can be thoroughly aired and all facets considered.

Sincerely yours,

———— ————,

(For Douglas P. Beighle, Vice President—Contracts, General Counsel and Secretary).

COUNCIL OF DEFENSE AND
SPACE INDUSTRY ASSOCIATIONS (CODSIA)
Washington, DC, February 21, 1984.

Hon. MARY ANN GILLEECE,
Deputy Under Secretary of Defense for Research and Engineering (Acquisition Management),
The Pentagon, Room 2A330, Washington, DC.

DEAR MS. GILLEECE: The undersigned members of CODSIA have reviewed both Section 794 of the 1984 Department of Defense Appropriations Act and the proposed implementing regulations. The opportunity to comment is appreciated.

We have concluded that Section 794 is so vague, costly and unworkable that it is not susceptible of implementation. It would require changes in acquisition policy, practice and contract pricing which would cause severe damage and disruption to defense programs and objectives.

There is widespread misapprehension that the defense industry is unwilling to provide warranties to its government customers. As you know, the fact is that the defense industry routinely provides both standard and specifically tailored warranty coverage to the government on most programs that have reached the state of technological maturity and volume production. What industry cannot provide, at affordable cost, is a continuing guarantee of product performance when the contractor does not control design, changes, or operational performance.

For these reasons, and others set forth below, we are advocating its repeal in the interest of national security. We are gratified that the President has requested repeal.

Section 794:

Implies a surrender by the DoD of control over the development and acquisition process which is totally inconsistent with Congressional and DoD discretion in determining how defense needs will be met;

Is inconsistent with cost-type and incentive-type contracts in which the government shares cost and performance risks.

Imposes a high-cost "performance requirements" guarantee which is new to weapon system contracts;

Leads prime contractors to an inevitable reduction of approved sources for spare parts and repair services, effectively negating Congressional, DoD and industry initiatives to reduce cost and help small businesses by increasing competition;

Attempts to equate weapon system guarantees which an idealized conception of commercial product warranties which are not comparable. Commercial manufacturers control the design, development, volume production and pricing of their products which embody mature technology. These a tributes are not found in the weapons system acquisition process.

Requires diversion of significant time and money from other DoD initiatives designed to improve operational performance and readiness of existing weapon systems;

Is anti-competitive and will accelerate the erosion of the industrial mobilization base due to the inability or unwillingness of many firms to accept or discharge the onerous performance guarantees.

Will inhibit technical innovation.

Would require development by DoD of a data system to provide for warranty performance data collection in order for Section 794 to be implemented. Such a system would be complex, very expensive, and take a long time to implement. Without such a system warranty performance could not be monitored properly.

We do not believe that any regulations can properly implement the new law. We recommend, therefore, that the Secretary of Defense issue a one-year blanket waiver of the guarantee requirement as a matter of necessity in the interest of the national defense to enable a Congressional evaluation of its need.

We nevertheless offer these comments on the DoD proposed policy guidance as a means of ensuring a complete record on the matter.

Unfortunately DoD's proposed regulations exacerbate, rather than moderate, the effect of Section 794. The proposed regulations will, improvidently:

Require retroactive application of the law affecting priced options, basic ordering agreements and existing letter contracts;

Exceed the statutory requirements by including contracts other than those calling only for production.

Expand the coverage of the guarantee requirement beyond active weapon systems to such things as software, support equipment, training devices and test equipment.

Fail to minimize the impact of the statute on other major defense policies and procedures.

Fail to account for the inherent inconsistencies between the fixed price guarantee requirements and cost reimbursement or flexibly priced acquisition methods;

Fail to recognize the incompatibility of the statute's requirements with DoD's retention of control over design, testing and operation of weapon systems;

Provide remedies which substantially exceed those specified by the statute;

Fail to implement the "specifically delineated" provisions in the statute;

Limit improperly the negotiator's ability to agree on the circumstances which will void the warranty in whole or in part;

Require extensive and expensive revision of each defense contractor's accounting system.

Additional detailed comments concerning the above are attached hereto.

As final suggestion, we invite attention to the Logistics Management Institute Report on Warranties on Commercial Items in use within DoD (October 1980, Contract No. MDA 903-77-C-0370-Task RE 002). It contains information and insights which we believe will contribute to the common objectives of using warranties in ways that will contribute to national security and cost effectiveness. We particularly commend their observation that warranties on products built to military specifications are of questionable value, do not tend to foster quality performance and would

cause the government to pay for expensive insurance protection on all items instead of selectively determining and controlling user costs through its long-established policy of being a self-insurer.

In the only Congressional hearing, on September 14, 1983, which preceded passage of Section 794, the three members of the Senate Defense Appropriations Subcommittee who were present, expressed a keen interest in obtaining information and expert opinions about the pros and cons of legislation requiring warranty coverage for weapon systems. We urge that DoD utilize the recommended hiatus on Section 794 by pursuing this enquiry vigorously so that Congress can have the benefit of information and studies already acquired by the government, together with current and pertinent information and competent opinion on this subject of such singular significance.

In view of the importance of this matter to the national defense, we stand ready to provide any further assistance you may desire.

Sincerely,

S.L. WRIGHT, *Vice Pres.*,
(For Karl G. Harr, Jr., President, Aerospace Industries Association.

———— ————,
(For Wallace H. Robinson, Jr., President, National Security Industrial Association).

———— ————,
(For Jean A. Callíau, Vice President, Electronic Industries Association).

F. LEE RICE,
President, Shipbuilder's Council of America.

[Attachments.]

COMMENT 1—IMPACT ON EXISTING CONTRACTS

Whenever a new law is enacted, efforts should be exerted to ensure that it is blended into the framework of existing statutes in an effort to minimize the disturbance of other laws and regulations. We do not believe that the proposed guidance does this. For instance, Section 794 (d) provides that: "The requirements for written guarantees provided in subsection (a) hereof shall apply only to contracts which are awarded *after the date of enactment of this Act* (emphasis added) . . ."

However, paragraph 2 of the Policy Guidance requires guarantees in cases of:

exercise of priced options *even when no further definition or negotiation of terms is required*;

placement of orders under existing basic ordering agreements; and

definitization of existing letter contracts.

We believe that retroactive application of the guarantee requirement is not essential under the law and that such application will result in an unwarranted disturbance of the procurement process. Thus, the above listed three categories of contract actions should *not* be included in the scope of the implementing policy guidance.

Furthermore, many weapon systems contracts and subcontracts already contain warranty requirements which have proven the practicability and cost-effectiveness of those warranty coverages. Where such warranties exist, and where addition of a new warranty should threaten disruption of an essential program, the Policy Guidance should recognize that it is in the interest of the national defense to permit the undisturbed continued application of such warranties without revision.

Further, we suggest the Policy Guidance explicitly state that the guarantee requirement is not applicable to:

Government furnished property/material and interfaces;

Items manufactured according to Government required designs;

Contracts in which the prime contractor did not design the weapon system or component;

Contracts to implement the upgrading of existing weapon systems and equipment;

Contracts providing for rebuilding or refurbishing government-owned equipment;

Service Contracts;

Foreign military sales and other non-DoD appropriation funded contracts;

Products sold or marketed to the general public in the course of normal business operations; (This does not prohibit the utilization of guarantees which may normally be applicable to items or contracts of this type);

Contracts requiring contractor to use specified sources including foreign sources; and

Contracts including any research, development, test or evaluation;

The inclusion of performance guarantees is particularly inappropriate in the case of contracts that call for both R&D and production since priceable performance guarantees can be identified only when R&D is completed and the technology is in hand.

COMMENT 2—APPLICATION TO COST REIMBURSEMENT AND FLEXIBLY PRICED CONTRACTS

The Statute provides that the Secretary may waive the performance guarantee requirements if he determines that "waiver is necessary in the interest of the national defense or would not be cost-effective." It is submitted that the inclusion of fixed price performance guarantees in cost reimbursement or other flexibly priced contracts by definition is not cost effective and that a class waiver should be issued for such contracts. The very reason why the use of cost reimbursement (flexibly priced) contracts is more beneficial to the government than firm fixed price contracts is the inherent uncertainty in the anticipated costs of performance or in the achievability of the ultimately desired technological objectives. A cost reimbursement (or flexibly priced) contract cannot be entered into until it has been determined that these technical or cost uncertainties exist. It would be illogical to require a contractor to resolve (via a fixed price "performance guarantee") those very technical uncertainties which led to contracting on other than a firm fixed price in the first instance.

A firm fixed price obligation must be susceptible to cost estimating and pricing with a reasonable degree of confidence. Sound firm prices are practicable only in the case of products that are already developed to the point where volume production can reasonably be undertaken. By definition, again, the very reason for using a cost reimbursement (or flexibly priced) contract is the inability to estimate cost or price with confidence.

The use of cost type and flexibly priced contracts is a long established practice where the national defense requires producton or operational use of weapon systems prior to resoluton of significant uncertainties.

We recommend that the Policy Guidance include a section reading substantially as follows:

"It is hereby determined that (i) the requirement for written guarantees under Subsection (3)(A) that the contractor bear the cost of all work to repair or replace parts required to achieve performance requirements would not be cost effective in the case of contracts of a cost reimbursement or incentive type and would not be in the interest of the national defense. The requirements of Subsection 794(a) are accordingly waived with respect to such contracts pursuant to the authority granted in Subsection 749(C)."

COMMENT 3—CONTROL OF DESIGN, SPECIFICATION AND REQUIREMENTS

Paragraph 3a of the proposed Policy Guidance and subparagraph (a)(1) of Section 794, both provide that the contractor must guarantee that the weapon system and each component were *designed* and manufactured so as to conform to the government's performance requirements. It is apparent that the statutory guarantee would radically change responsibility for weapon system performance. The Policy Guidance makes it clear that DoD is not prepared to permit the universal and immediate transfer to contractors of the existing government controls, direction and approvals which any implementation of this change would require. The result presents a difficult if not impossible situation giving contractors responsibiity for performance of systems and components without control over design.

The transfer of design control would require drastic changes to current acquisition policy. For example, under the "Changes" clause (DAR 7-103.2, 7-203.2 etc.) the government has the unilateral right to order changes in the "Drawings, designs or specifications, where the supplies to be furnished are to be specially manufactured for the government in accordance therewith. . .". This unilateral power to change is incompatible with contractor responsibility for the design. Hence, a contract containing a weapons system performance guarantee would have to omit the current "Changes" clause and set forth one which limits such unilateral government rights to matters which would have no bearing on system performance and further permits latitude for contractor initiated changes.

Any surrender of discretion to define how performance requirements will be met, resulting from the warranty legislation, is totally inconsistent with the necessary control of that process by DoD and the Congress.

National security demands that the legislative and executive branches define, budget, and implement defense requirements. In surrendering to contractors the decision as to how requirements will be met by the design, national security needs may be made subservient to market risks. Thus, it is essential that, in the interest of national security, a waiver of the warranty requirement be granted whenever the government retains control of requirements, design, or specifications.

COMMENT 4—REMEDIES

The remedy provided by the statute for failure to satisfy performance requirements is simple clear and unmistakable *viz,* "the contractor will bear the cost of all work promptly to repair or replace such parts as are necessary to achieve the performance requirements." The statutory remedy for failure is parts repair or replacement, no more and no less.

It would appear that, in enacting Section 794, Congress has in mind that the guarantees would be applied to mature systems, already fully developed, tested and qualified, so that performance failures would solely result from improperly built parts. There is no evidence that Congress intended that the guarantees would include redesign, redevelopment, retest and retrofit. To the contrary, if these remedies were included the guarantee would become so expensive as to assure the need for a cost effectiveness waiver in virtually every case.

DoD, in the proposed policy guidance memorandum has gone far beyond the statutory requirements. In addition to requiring parts repair or replacement:

It has provided (in Section 5(a)) in effect for system redesign and remanufacture.

It has provided for the performance of all corrective work "at no cost to the government," a requirement which is inconsistent with the philosophy and policy relating to cost reimbursement and flexibly priced contracts.

It has gratuitously imposed on the contractor (in the model clause) round-trip transportation costs for items returned to the contractor notwithstanding the circumstances.

It has added requirements for data and reports.

It has given itself the added option of a price reduction.

The regulatory expansion in the guidance memorandum of the guarantee remedies over the specific repair/replacement remedy contemplated by the statute may be expected to encounter strong resistance from many sources, but especially among suppliers. The unlimited extent of liability, including consequential and incidential damages is unacceptable in normal business practice.

To avoid needless additional contingency pricing at all levels, and to be consistent with established DoD policy regarding liability for defects in major weapon systems including DAR 7-104.45, the Policy Guidance and model contract clauses should require the exclusion of all remedies other than those in the statute and currently provided in weapon systems contracts.

COMMENT 5—SPECIFICALLY DELINEATE PERFORMANCE REQUIREMENTS

The Department of Defense has failed to implement the "performance requirements as specifically delineated" provision in the statute. Incorporation by reference of a host of specifications at numerous tiers cannot satisfy the specific delineation provisions.

The proposed regulations should require that those performance requirements subject to the warranty provision be set forth in one place in the schedule of the production contracts.

COMMENT 6—NEGOTIATION SHOULD DEFINE CIRCUMSTANCES THAT VOID GUARANTEES

The proposed regulations limit negotiation of the question of the circumstances in the guarantees becoming void. Paragraph 11 of the implementing regulations should be deleted and the following substituted: "During negotiation of the contract, each circumstance(s) that would have the effect of voiding the guarantee, in whole or in part, should be identified and specifically delineated in the contract."

COMMENT 7—EROSION OF DEFENSE MOBILIZATION BASE

Section 794 will, in and of itself, have a serious erosive effect on the Defense Mobilization Base (absent waivers of performance guarantees). As the Statute is pro-

posed to be implemented by DoD, this erosive effect will be aggravated. In numerous areas (e.g., by failing to waiver application of performance requirements to cost reimbursement and flexibly priced contracts, by failing to relax DoD retention of design and operational control and by exceeding the statutory remedies) DoD has compounded the erosion comsequences and impeded the initiative to increase competition.

Prime contractors will be unwilling to assume the financial risk of a weapon system caused by a supplier-furnished item and will have no realistic choice to flow down to subcontractors and suppliers the full impact of the performance guaranty by way of supplier indemnification.

The magnitude of the potential liability on the part of a supplier for a weapon system failure could be runious. Predictably, many suppliers will simply elect to quit the defense business rather than face the risk of bankruptcy. This is particularly true of suppliers who manufacture components which are of critical functional importance but which are of relatively low dollar value. It would be clearly improvident for such a supplier to assume a financial exposure that could be hundreds or thousands of times the value of his subcontract.

Other suppliers will not have the financial resources to respond to sizeable performance guaranty claims and will, on that account, be found not responsible for awards by prime contractors and higher tier subcontractors.

The net effect of the withdrawal of a significant number of suppliers at all levels from weapon system business will be a serious curtailment of the supplier mobilization base and a significant reduction in opportunities for competitive procurement.

LATHAM, WATKINS & HILLS,
ATTORNEYS AT LAW,
Washington, DC., February 21, 1984.

Attention: Mr. RON BULMER

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING (ACQUISITION MANGEMENT),
The Pentagon, Room 2A330, Washington, DC.

DEAR SIR: Attached hereto is our memorandum setting forth comments on the "Draft Guidance on Written Guarantees" issued by the Department of Defense. We have limited our comments to certain legal and procurement process matters. Comments on operational matters can best be addressed by the contracting community, whose participants will bear the operational impact of the statute and its implementing guidelines.

Sincerely,

LATHAM, WATKINS & HILLS.

[Attachment.]

COMMENTS ON PROPOSED GUIDANCE TO IMPLEMENT SECTION 794 OF THE DEFENSE APROPRIATION ACT FOR FY 1984

I—INTRODUCTION

Section 794 of the 1984 Defense Appropriations Act establishes new warranty requirements in connection with the procurement of weapon systems. Application of the warranty requirements will unquestionably have substantial impact on contracting for weapon systems. The primary impact of section 794, if it is widely applied, is that the cost of weapon systems should dramatically increase, due both to the uncertainty that the requirement would create and to the potential but largely unpredictable costs to which the contractor would be exposed under the guarantee provision.

Because of the uncertainty created by the statute, we believe that the guidance promulgated by the Department of Defense need be specific and detailed. We further believe that such guidance should not expand the scope of section 794. The following comments address the Department's proposed guidance in these two respects.

II—COMMENTS

A. DEFINITION OF "WEAPONS SYSTEM"

The proposed guidance defines a "weapon system" as "equipment which, without substantial modification, is or can be used directly by armed forces to carry out combat missions. . . . The term includes software, ordnance, related support equip-

ment such as ground handling equipment, training devices, test equipment and accessories thereto."

The breadth of this definition is not mandated by statute, and indeed appears to be far more expansive than other definitions of "weapon system" established by the Congress or the Department. For example, "weapon system" is defined in DoD Directory of Military and Associated Terms, JCS Pub. 1, as: "A weapon and those components required for its operation." Air Force Manual 11-1 contains the same definition. In 32 C.F.R. § 179,3(p), "weapon system" is defined as a "final combination of subsystems, components, parts, and materials of an entity used in combat, either offensively or defensively, to destroy, injure, defeat, or threaten the enemy."

We urge that the Department, at minimum, delete the last sentence of the proposed definition. This would change the definition to fit the statutory language, and to more closely resemble other Department definitions of the term.

B. PROSPECTIVE GUARANTEES

The proposed guidance states, in paragraph 8, that: "The duration of the written guarantee shall be tailored, as appropriate, to the specific contract award. The duration of the written guarantee(s) within any given contract award *need not be the same for all specified performance requirements.*" (Emphasis in original). This language suggests that a contractor's guarantee obligations might extend long after delivery of the weapon system to the Government; in theory, it could cover the life of a weapon system. As such, the proposed guidance considerably departs from the express statutory mandate, and will lead to increased cost to the Government and increased uncertainty for both the Government and the contractor.

Section 794 does not require that a contractor guarantee performance over a period of time. Rather, its terms merely contemplate that the contractor guarantee (i) that *at the time of delivery,* the weapon system be free of defects that would cause the weapon system to depart from applicable performance requirements, and (ii) that the weapon system be free from design or manufacturing defects (which, by definition, cannot arise after delivery). *See* section 794(a). We therefore urge the Department to adopt guidance that confirms that a contractor's guarantee obligations terminate at the time of delivery.

C. DEFINITION OF "CONTRACT AWARD"

Paragraph 2 of the proposed guidance contains several examples of contract awards that would be subject to the guarantee requirement. Among the examples are two that would seem to go beyond the requirements of Section 794 during the transition period, namely the exercise of a priced production option and the placement of an order under a basic agreement or a basic ordering agreement. The guidance should state clearly that the exercise of such an option, or the placement of such an order, pursuant to a contract or basic ordering agreement in place at the effective date of the guidance with previously negotiated terms, need not be reopened and renegotiated.

D. WARRANTY OF DESIGN

Section 794(a) requires a guarantee of design "so as to conform to the Government's performance requirements. . . ." Design is, of course, a never-ending process. Continuation of design is, in fact, encouraged by such programs within the Department as Preplanned Product Improvement, an element of the Defense Acquisition Improvement Program. Historically, the Government has played a role in the design activity, the extent of which has varied widely from contract to contract. The Department's guidance should specifically address design changes during performance of contract, including whether to prohibit Department-initiated changes during such period and whether the contractor, which bears the risk, should be the ultimate design authority.

E. IMPOSSIBILITY/DEFECTIVE SPECIFICATIONS

The proposed guidance fails to address the possibility that a performance "requirement" at issue might prove to be either impossible or impracticable to achieve, whether due to defective specifications or otherwise, in a manner not reasonably foreseeable at the time of contracting. In the procurement context, the problems of impossibility or impracticability are not remote. this issue should be explicitly addressed in the guidance.

F. GOVERNMENT FURNISHED PROPERTY

The contract clause attached to the proposed guidance states that: "with respect to government-furnished property the contractor's guarantee shall extend only to its proper installation so as not to degrade its performance and/or reliability, unless the contractor performs some modification or other work on such property, in which case the contractor's warranty shall extend to such modification or other work."

This guidance appears to expand upon section 794(b), which provides that the guarantee requirement "shall not apply in the case of any weapon system or component thereof which has been furnished by the Government to a contractor." We urge the Department to clarify the proposed guidance in this respect to bring it into conformity with the statute.

G. WAIVER

Section 794(c) of the statute provides that the Secretary of Defense may waive the guarantee requirement if he "determines that the waiver is necessary in the interest of the national defense or would not be cost-effective." (Presumably, this provision will be construed to mean that a waiver may be granted if the *guarantee,* rather than the *waiver,* would not be cost-effective). The proposed guidance generally addresses the waiver provision, but fails to offer specific direction as to when a waiver should be granted. Lack of specific guidance may, in turn, lead to inconsistent application of the waiver authorty. We suggest that the Department consider whether it would be appropriate to identify circumstances (*i.e.,* where the cost of the guarantee would exceed a specific percentage of the total cost of the weapon system) in which waivers presumptively should be granted.

H. ADDITIONAL DEFINITIONS

We believe that certain terms used in the statute or the Department's guidance should be defined in the guidance, as follows:

1. The term "other contractors", as used in section 794(a), is unclear, particularly in light of the definition in the guidance of the term "procurement."
2. The term "production contract" can mean different things to different people. In addition, in light of the fact that many contracts cover a number of different efforts, of which production for field use may be but one, the guidance should clearly state that the guarantee provisions are to apply only to that portion of a contract covering production, and not other efforts.

Dated: February 21, 1984.

MACHINE PRODUCTS CO., INC.,
La Crosse, WI, February 21, 1984.

RE: Draft Guidance on Written Gurarantees 40 F.R. 2502 ET. SEQ.

OFFICE OF THE DEPUTY UNDERSCRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING (ACQUISTION MANAGEMENT),
The Pentagon, Room 2A 330, Washington, DC.

GENTLEMEN: Machine Products Company, Inc., A Wisconsin corporation, wishes to comment on certain portions of the Defense Department's Draft Guidance or Written Guarantees.

Our company has always warranted to our customers that our products are free from defects in material and workmanship and meet applicable performance standards. We therefore have no criticism of the nature of the Guarantees sought by the Department.

We are, however, concerned about the open-ended remedy the Department might assert if a product does not conform to the warranty. While most companies are prepared to repair or replace any non-conforming product, no company can reasonably be expected to undertake the risk of bearing "all costs in connection therewith" (see *Guarantee*) (b)(1), 49 F.R. 2506). The cost of consequential damages in most instances far exceeds not only the value of the contract but also the financial resources of the company undertaking such a guarantee.

In the private sector, remedies upon breach of performance are commonly a matter of negotiation between parties to a contract. With the Department's Guidance, we are concerned the remedies will be non-negotiable. In such case, contractors will be left with the unhappy choice of undertaking a guarantee which if invoked could bankrupt a company or forego the opportunity to do business with the government. In our view this is bad business for contractors and for the govern-

ment, which should encourage participation by a larger community of vendors, both big and small.

Respectfully submitted,

A. F. SKOVER, *President.*

FINANCIAL EXECUTIVES INSTITUTE,
Washington, DC, February 21, 1984.

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING (ACQUISITION MANAGEMENT),
The Pentagon, Room 2A330, Washington, DC.

The Financial Executives Institute's Committee on Government Business believes that Section 794 of the 1984 Defense Appropriations Act is unnecessary because the current Defense Acquisition Regulations (DAR) and the Federal Acquisition Regulations (FAR) already contain cost-effective warranty provisions and clauses designed to protect the Government's financial interests.

As you may know, the Financial Executives Institute (FEI) is a professional organization of individual members who are senior financial and administrative officers in business organizations throughout the United States. FEI has over 12,500 members who are affiliated with some 6,000 companies in virtually all seqments of the economy and who, therefore, represent a broad cross-section of American Business.

At the present time, the flexibility contained in the existing regulations enables the contracting officers to tailor contractual agreements to fit specific situations. In this regard, the mandatory and all encompassing warranty requirements of Section 794 create additional unnecessary and costly requirements for both the Government and industry.

The following comments relate to the draft Policy Guidance issued by the Department of Defense (DoD) and are referenced to the paragraphs in that document.

Statement 1(d) refers to a "government production contract." The term "production contract" must be precisely defined to exclude RDT&E (Research & Development, Test & Evaluation) efforts and to cover those situations where production is authorized concurrently with the development of a weapons system.

Statement 1(f) needs to be clarified on how a firm-fixed price guarantee line item can be handled in a cost-type or flexibly-priced contract. How can such a line item be estimated, or priced, when the cost of producing the system and its components is not determined until the contract is complete? We believe the guidelines should not apply to cost-type contracts.

Statement 2. Clarification is needed on the application of the effective date to situations where the research and development phase of the procurement cycle began prior to the effective date of the law.

Statement 3(a) should be expanded to specifiy a procedure for demonstrating that a weapons system was designed and manufactured in conformance to contractual requirements.

Statement 4. Any clauses developed under this guidance should override any other post-acceptance remedy of the United States Government, but not override other limitations on a contractor's liability.

Statement 5(a) places an unwarranted burden on contractors performing RDT&E efforts because the law specifies that the warranty applies to production contracts only. The application of the warranty provisions to production go-aheads authorized prior to completion of research and development needs to be addressed.

Statement 5(b) creates a complex administrative problem since innumerable and immeasurable constraints on the service use of each and every component of a weapons system would have to be included in the contract. Proscribing the methods for monitoring such use would be almost impossible.

Statement 10 imposes an excessive burden on both the Government and the contractor to identify and agree on realistic and achievable performance requirements which reflect the needs for a weapons system.

A major concern of the financial community is the possibility of unlimited liability on the part of contractors and their subcontractors and suppliers if the guarantees extend over the life of a product, including transfers to foreign governments under military assistance programs. To be workable, specific limitations on the contractors' liability in terms of calendar time or hours of usage must be in conformity with the Policy Guidance. Given these limitations, it will still be difficult to price the cost of the guarantees. The Department of Defense can expect significant increases in the costs of weapons systems as well as significant delays in bringing programs to the production plan phase if Section 794 is implemented.

Another issue not covered in the Policy Guidance is the possible addition of insurance costs which will also be passed along to the Government in the form of increased prices. Currently, the Government assumes responsibility for certain losses not covered by a contractor's product liability. If the warranty provisions are implemented, the law may require contractors to assume responsibility for losses or damages to systems which are not currently their responsibility.

Sincerely,

A.E. JOHNS,
Chairman, Committee on Government Business.

REMMELE ENGINEERING INC.,
ENGINEERING-DEVELOPING-MANUFACTURING,
St. Paul, MN, February 21, 1984.

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING (ACQUISITION MANAGEMENT),
The Pentagon, Room 2A330, Washington, DC.

GENTLEMEN: The proposed FY 84 Department of Defense Appropriation Guarantee Provision Act, Section 794, will have an adverse affect on small business as well as major contractors. Industries inability to guarantee undefined risks can only lead to higher costs and create extensive negotiations between the prime contractors and subcontractors.

It will benefit the government to further study this proposal and receive industries input before enacting the Guarantee Provision Act.

Very truly yours,

JOHN H. HERZOG,
Plant Manager.

DONALDSON CO., INC.,
Minneapolis, MN, February 22, 1984.

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING (ACQUISITION MANAGEMENT),
The Pentagon, Room 2A330, Washington, DC.

GENTLEMEN: The proposed guidelines to implement the requirements of Section 794 of the 1984 DOD Appropriation ACT concern us, especially the guarantee of performance requirements.

It would be very difficult for a private company to guarantee the design when the Government owns the design and we build to the Government specifications.

We also make equipment that can eventually have portions of it replaced with spares from some other manufacturer and it would be extremely difficult to determine who would be at fault in the event of a claim.

This program would, in our estimation, restrict competition and increase costs to cover undefined risks that may lead to claims that may or may not be the contractors fault.

Sincerely,

ROGER J. GERAGHTY,
Account Manager, Defense Products.

LABARGE ELECTRONICS,
St. Louis, MO, February 22, 1984.

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE/ACQUISITION MANAGEMENT,
The Pentagon, Room 2A330, Washington, DC.

GENTLEMEN: The purpose of this letter is to advise you of the concern I have regarding the provisions of Section 794 of the 1984 DOD Appropriations Act.

The scope of the guarantee requirements is vague; consequently, the risks are very difficult, if not impossible to define. As a relatively small Defense contractor, the consequences of assuming such undefined risks are potentially ruinous. The situation imposed by Section 794 will ultimately have profound effects on the entire industry and on the ability of industry to provide military equipment.

Hearings are scheduled to begin on February 28 by the Senate Armed Services Committee and will provide the forum for industry to present its' views. I urge you to support industry's efforts to repeal Section 794.

Thank you very much for your attention to this extremely important matter.

Very truly yours,

CRAIG E. LABARGE,
President.

Reference: Section 794, Department of Defense, Appropriation Act—1984.

DYNAMIC AIR ENGINEERING INC.
Santa Ana, CA, February 22, 1984.

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING (ACQUISITION MANAGEMENT),
The Pentagon, Room 2A330, Washington, DC.

GENTLEMEN: With reference to the above section of the Department of Defense Appropriation Act, we are writing as a supplier to express our concern with the new requirements enacted by Congress in the last session.

During the past week we have received correspondence from customers with whom we work on Weapon System contracts. There is a very real concern about the ambiguity of what is included in guarantees that all companies might be expected to give. As a small company the related costs might be impossible to absorb, and prime contractors have indicated that they would be unable to do other than pass these down the line to us.

Another concern involves how any guarantee can be affected when one supplier who is only part of the total design can be held responsible for something over which the government or a prime exercises total freedom to make changes.

Several issues are unclear and others are left unresolved as is the determination of claims under the guarantees. The use of spare parts from other contractors (often the lowest bidder) is just one indication of the far reaching implications this might have in guaranteed performance requirements. In our own experience the government has accepted parts from "non-qualified" sources because of the "lowest bidder" criteria.

It is for these reasons and others that we feel a great deal more clarification should be made before small companies will be able to decide whether or not they can afford to continue to be suppliers of the government.

We would appreciate your support in urging repeal of this legislation at the hearing scheduled for February 28, 1984.

Yours very truly,

NANCY GLASCOCK, *President.*

AVONDALE SHIPYARDS, INC., A SUBSIDIARY OF OGDEN CORPORATION,
New Orleans, LA, February 22, 1984.

Hon. MARY ANN GILLEECE,
Deputy Under Secretary of Defense (Acquisition Management), Room 2A330,
The Pentagon, Washington, DC.

DEAR MS. GILLEECE: This is in response to your notice of January 17, 1984 concerning proposed policy and procedure with respect to Section 794 of the 1984 Department of Defense Appropriations Act ("the Act").

Along with other shipyards constructing vessels for the U.S. Navy, Avondale Shipyards, Inc. continues to seek repeal of the Act because it unfairly penalizes a shipyard in at least the following three respects:

(1) the Act forces the shipyard to guarantee performance (as opposed to material and workmanship), even though the shipyard has no input in the design of the system,

(2) the Act is so vaguely worded that it suggests the shipyard's guarantees for performance of the weapon systems (as well as for material and workmanship) are to run for the life of the vessel—a concept unheard of in the commercial world, and

(3) the shipyard, which has little or no expertise in avionics and munitions systems, is being penalized unfairly since it has no way to force the vendor of the weapon system to accept the guarantee clause.

While we understand that it is not within DOD's authority to ignore the Act, we believe the proposed guidelines go too far and expand even further the already far-reaching effects of the Act. Accordingly, we urgently recommend the following changes to your policy guidelines:

(1) The definition of a "weapon system," as stated in paragraph 1(a), should not include the basic hull or power or navigation systems of a "combat naval vessel."

The legislative history of the Act clearly shows that Mr. Andrews did not intend the shipyard's traditional shipbuilding work to be encompassed by the scope of the Act. (In fact, the Navy for years has received material and workmanship guarantees and, when the vessel is designed by a shipyard, performance guarantees for the traditional vessel portion of the work.) Mr. Andrews had in mind only those specific systems, such as missile systems, which are independent weapon systems, supplied to the contractor by unaffiliated weapon systems, supplied to the contractor by unaffiliated vendors. In fact, it was the reported failures of several missile systems that caused Mr. Andrews to offer his amendment. Since Congress has not mandated DOD to include the hull and non-weapon system portions of a vessel, there is no need to do so, especially in view of existing Navy practice.

(2) At the very least, DOD should specifically exclude vessels such as the TAOs, which Avondale is constructing. Your statement defines a "weapon system" as "equipment which, without substantial modification, is or can be used directly by armed forces to carry out combat missions." Since TAOs do not "directly" carry out combat missions, and only "indirectly" support such missions, we must conclude that such vessels do not fall within the purview of the Act.

(3) The word "anywhere" used in paragraph 1(d) is vague and should be clarified. At the very least, a shipyard ought not to be held responsible for a performance requirement unless the requirement is brought to the yard's attention before the signing of a contract.

(4) Our interpretation of paragraph 1(g) is that the line item will be the allowable cost under the contract. Any underrun or overrun will not be considered even in an incentive type contract. Is this interpretation correct?

(5) Paragraph 2(b) generally states that the new requirements apply to pre-existing options exercized by the Navy after March 14, 1984. For example, Avondale was the successful bidder on one LSD in FY 83, with the Navy having an option for four more vessels (two in FY 84 and two in FY 85). Since Avondale's bid, which was the lowest bid received by the Navy, was submitted prior even to Mr. Andrew's offering of his amendment, there obviously was no way for Avondale to offer a "firm fixed price line item." (See paragraph 1(f) of your statement.) Since no such line item exists on Avondale's option LSD ships, it is assumed a change order will be forthcoming before the options are exercized.

In the alternative, we recommend DOD exempt all options, such as the LSD options, pursuant to a contract entered into prior to passage of the Act. Section 794(d) of the Act provides that:

> "(d) The requirements for written guarantees provided in subsection (a) hereof shall apply only to contracts which are awarded after the date of enactment of this Act. . ."

The above language was enacted December 8, 1983, some seventeen days after we had been awarded the LSD contract. Accordingly, we suggest the DOD would be on solid ground in exempting options granted pursuant to a contract awarded prior to enactment. Your paragraph 2 is silent on the effect of such a timing sequence.

(6) The words "for any cost incurred by the government" in paragraph 3(b) need definition as, for instance, to exclude consequential costs. Otherwise, the shipyards will have to quote a very high price for the guarantee.

(7) The second of the two guarantees, in paragraph 6, encompasses the first. In this case components may meet specific performance requirements on the ship, but may not be adequate for performance of the system or entire ship, even though the performance requirements component-by-component were specified by the government. Generally this would not be a problem in that such technical matters are reviewed during the engineering stages of a contract. However, the potential exists for enormous cost impact. For instance, if the horsepower of the main engine is specified by the government and is met in performance, but if the speed of the ship is specified by the government and is not met by the consumption of the horsepower, presumably the cost of correction would be for the yard, even though yard furnished the exact engine the government had requested.

(8) All performance requirements should be clearly stated in the RFP. Paragraph 10 is vague and suggests that contracting officers may include other performance requirements not specifically listed in the RFP. This should not be allowed.

We appreciate this opportunity to comment and will furnish any additional information you may require.

Sincerely,

R.F. BRUNNER.

CONGRESS OF THE UNITED STATES,
Washington, DC, February 23, 1984.

DEAR COLLEAGUE: As you may know, the FY 1984 Defense Appropriations bill contains a provision requiring defense contractors to provide warranties for the weapons they produce. These warranties are expected to save American taxpayers billions of dollars and help improve the reliability of the weapons systems purchased for our armed forces.

However, while the Defense Department has been assuring Congress of the law's implementation, tucked away in the fine print of the President's FY 1984 Supplemental Defense Appropriations request and his proposed FY 1985 Budget is language calling for the repeal of this landmark legislation. It is ironic that the Administration should seek to repeal this legislation at a time when it is attempting to convince both Congress and the American people that is is serious about eliminating unnecessary spending from the defense budget.

As you may know, the Air Force and Navy have recently signed contracts with the General Electric Company to produce jet engines for our F-14, F-15 and F-16 fighters. Both services indicated that GE's willingness to provide a comprehensive warranty was a major factor in their decision. The Air Force estimates that the engine warranties, Congressionally mandated, may enable savings of $3 billion.

It is unclear exactly who in the Administration is seeking repeal of this provision. In recent testimony before the Senate Budget Committee, Secretary of Defense Weinberger initially denied that any repeal was being sought. Last week a spokesman for the Pentagon, while acknowledging that it favored repeal, could only speculate that the request "apparently" originated in the Office of Management and Budget.

On January 20th, the Department of Defense published its proposed policy guidelines for implementing the warranty in the *Federal Register* and solicited public comments. Initial responses have stressed the value of warranties in assuring the reliability, effectiveness and endurance of our weapons systems. Others asked those in the procurement proces to think seriously about the standard of performance he or she would demand in a weapon in the hands of a son or daughter.

It is vital that Section 794 of the FY 1984 Defense Appropriations bill remain law and implementation of its provisions begin. I am seeking your assistance. If you can help, please contact Anne Senese at x56451 as soon as possible.

Sincerely,

MEL LEVINE,
U.S. Representative.

KAYDON CORP.,
Muskegon, MI, February 23, 1984.

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING (ACQUISITION MANAGEMENT),
The Pentagon, Room 2A330, Washington, DC.

GENTLEMAN: As a significant supplier of material for the Department of Defense, we'd like to present our views on the pending implementation of Section 794 of the 1984 DOD Appropriations Act.

The proposed guidelines which we have had an opportunity to review, contain in our judgement many flaws and require reconsideration and redrafting. In general, many of the provisions are excessively open-ended, and in fact are not consistent with normal commercial practices. It is our understanding that the Department of Defense is desirous of increasing competition in an effort to maintain and reduce costs to the Government for procurements made by the Department of Defense. We do not believe that the many provisions as detailed, would achieve this objective.

For example the guarantee sections would require all costs associated with replacing a defective item to be borne by the parts supplier. In commercial business this is considered a contingent liability and is not a normal selling practice. The reasons for this are the fact that any supplier who signs in affect a blank check, is opening themselves to an unrealistic and unknown future cost liability. Prudent business practices require people who take on such unknown risks, to in effect, build an insurance or warranty pool of significant magnitude. It is for this reason that general commercial practices require only defects, workmanship, and material be warranted. In fact, any supplier to a commercial customer, as well as the Department of Defense, must rely on a continued stream of business and hence can ill afford to be involved in extensive warranty failures. In addition the rigorous specification and

quality control systems currently in place, will preclude defective material from moving into the field at the outset.

It is not the purpose of this letter to attempt to detail specifically each item, but rather to request that the Department of Defense refrain from implementing these guidelines until additional study and corrections can be implemented.

Thank you for your attention to this request.

Very truly yours,

RICHARD A. SHANTZ,
President.

ROCKWELL INTERNATIONAL,
El Segundo, CA, February 24, 1984.

Hon. MARY ANN GILLEECE,
Deputy Under Secretary of Defense for Research and Engineering (Acquisition Management),
The Pentagon, Room 2A330, Washington, DC.

DEAR MS. GILLEECE: The purpose of this letter is to express our concern over the proposed DOD implementation of Section 794 of the 1984 DOD Appropriations Act.

Rockwell regularly provides warranties under appropriate circumstances to both commercial and Government customers. However, blanket application of warranties and guarantees to all DOD weapons systems goes far beyond normal commercial practice and, for reasons described in the Council of Defense and Space Industry Associations letter to you dated February 21, 1984, will not be in the national interest.

Rockwell endorses the comments contained in the CODSIA letter and its support of the President's request for repeal of Section 794. We also join CODSIA in urging your careful consideration of a blanket waiver pending further Congressional review.

Sincerely,

FRED P. ZIMMER.

LAYKE, INC.,
Phoenix, AZ, February 24, 1984.

Attn: Mr. HARVEY J. GORDON.
The Deputy Under Secretary of Defense Acquisition Management,
The Pentagon, Washington, DC.

DEAR SIR: This letter is written to protest Sec. 794 of the Defense Appropriation Act of fiscal 1984. Please refer to vol. 49 No. 14 Federal Register, Friday Jan. 26, 1984, for the test of the Law and its proposed implementing regulations.

If this bill is not repealed it will destroy small machine shop businesses; by making it prohibitive cost wise to protect ourselves, and in addition we feel the additional cost would severely affect our defense program.

Respectfully,

A.W. CANFIELD,
Chief Executive Officer.

EAGLE-PICHER INDUSTRIES, INC.,
ELECTRONICS DIVISION,
Joplin, MO, February 24, 1984.

Mr. HARVEY J. GORDON,
Deputy Under Secretary of Defense, Acquisition Manageer,
Department of Defense, Pentagon, Washington, DC.

DEAR MR. GORDON: The implementation of Section 794 of the Defense Appropriations Act for Fiscal 1984 requiring the assumption of risk for a systems failure by each supplier of military components at all levels is potentially disastrous.

System components are manufactured to Government requirements and tested to Government specifications. The design, development, testing, and manufacture are controlled by the Department of Defense. To require the manufacturer of a component which is manufactured to Government specifications to assume the responsibility of an entire systems failure is unconscionable.

This section was passed with only one hearing and no debates. We are asking your support in the repeal of this rider, or at least a deferment until the full implications of its implementation can be determined.

Sincerely,

JEFF K. WILSON,
Vice President.

CRAFTNEEDS, INC.,
Cincinnati, OH, February 24, 1984.

MARY ANN GILLEECE,
Deputy Under Secretary of Defense, Acquisition Manager,
Department of Defense, Pentagon, Washington, DC.

DEAR UNDER SECRETARY: We are a small business sub-subcontractor furnishing significant cost-effective components for DoD Systems. As a small business, we are not capable of accepting the responsibility of indemnity as set-forth in Section 794 of The Department of Defense Appropriation Act for Fiscal Year 1984.

The consequences of our assuming the risk of a system failure are potentially ruinous. This risk will have a profound effect on our entire industry and on the ability of our nation to provide military equipment. It is highly questionable as to whether we can afford the cost of the effort.

We urge you to support our efforts to repeal Section 794. The risks created by Section 794 can have serious counter-productive effects on our mission accomplishments, product suitability, and effective competition. In fact, we may find it necessary to withdraw our cost-effective effort in the military supply business.

Section 794 is a serious threat to our survival as a small business. We need your assistance to repeal Section 794.

Sincerely,

RALPH P. DAMON,
President.

DEPARTMENT OF DEFENSE,
JCS MESSAGE CENTER,
Garden Grove, CA, February 1984.

Hon. RICHARD D. DE LAURE,
Research & Engineering,
Under Secretary of Defense, Pentagon Washington, DC.

We are a small business and we urge repeal of Section 794 of the Department of Defense Appropriation Act for fiscal year 1984. It is neither realistic nor cost effective for contractors to guarantee that all weapon systems and components thereof are designed and manufactured to the government's performance specifications. By and large, such purchases by the government are for special purpose, low volume, high reliability articles with performance specifications that frequently seek to push the state of the art or are at the outer edge of the state of the art.

Past experience data is inadequate to reasonably estimate future costs attributable to the guarantees section 794 seeks. The government realizes substantial savings by selectively requiring such guarantees when justifiable. The government therefore benefits (1) from the exclusion of contingency costs contractors would have to include to cover for the unknown as well as (2) from the pyramiding of such costs estimated by lower tier subcontractors to their customers and ultimately passed on to the government. This is because prime contractors by necessity will seek to transfer this risk of guarantees to their suppliers.

Furthermore, it is manifestly inappropriate to require contractors to buy a "pig in the poke". Contractors and subcontractors would be guaranteeing meeting specifications which push the state of the art. In addition, contractors would be guaranteeing to meet unknown performance specifications attributable to changes unilaterally ordered by the government and unknown to the contractor when the contract was first entered into. This is because government contracts contain a clause giving the governments the right to unilaterally order changes within the general scope of the contract.

Finally, Section 794 would be disastrous to small business required to compete with giants of industry who are better able to accept the risks involved. In this regard, note that small and medium size businesses could be required to guarantee parts of relatively insignificant value and thereby be responsible for the costs appli-

cable to a highly valuable product. In other words, a defect in a ten cent part could cause the supplier to be liable for a multi-million dollar item.

Please advise us if you can help in this very serious matter. I have assigned Harold Gold, esq., our senior vice president, to the task. Feel free to contact him directly. The telephone number is (714) 893-7531.

CHARLES J. DEISCHTER,
President, Chief Operating Officer.

OEA INC.,
Denver, CO, February 1984.

Hon. MARY ANN GILLEECE,
Deputy Under Secretary, Department of Defense, Acquisition Management, The Pentagon, Washington DC.

DEAR DEPUTY UNDER SECRETARY GILLEECE: Section 794 the Department of Defense Appropriation Act for fiscal year 1984 imposes performance and other guarantees in weapons systems contracts which would prohibit all aerospace contractors from providing cost-effective military equipment. In addition, the consequences to the contractors and subcontractors of assuming the risks of a system failure as envisioned by Senator Mark Andrews, sponsor of section 794, could ultimately have profound effects on the ability to the aerospace industry to support our military requirements.

The risks created by this statutory requirement are so threatening that we respectfully request your support of the current efforts to repeal section 794. Respectfully.

A.D. KAFADAR,
President and Chairman of Board.

SHELLER-GLOBE CORP.,
Cleveland, OH, February 1984.

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING,
Pentagon, Washington, DC

The requirements and implementation of Section 794 of the 1984 DOD Appropriations Act will cause immeasurable harm to most manufacturers with implementation by March 14, 1984, without substantial clarification of many of the key factors.

We urge you to reconsider the implementation before full examinations of the impact of the Defense supply system.

ROBERT G. HILL,
Executive Vice President.

REMMELE ENGINEERING INC.,
Big Lake, MN, February 1984.

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING, AQUISITION MANAGEMENT,
Pentagon, Room 2A330, Washington, DC.

GENTLEMEN: The proposed FY84 Department of Defense Appropriations guarantee Provision Act, Section 794, will have an adverse affect on small business as well as major contractors. Industries inability to guarantee undefined risks can only lead to high costs and create extensive negotiations between the prime contractors and subcontractors.

It will benefit the Government to further study this proposal and receive industries input before enacting the Guarantee Provision Act.

Very truly yours,

JOHN H. HERZOG,
Plant Manager.

METAL BELLOWS CORP.,
Chatsworth, CA.

MARIANNE GILEECE,
Secretary Defense Acquisition Mgmt., The Pentagon, Washington, DC:

I urge you to repeal Section 794 of the Department of Defense Appropriation Act for FY84 which imposes sweeping new requirements for performance/guaranties in weapon system contracts.

Nearly all prime contractors will not absorb the risk of an entire weapon systems failure attributed to a supplier furnished item. The consequences to a subcontractor such as ourselves of assuming the risk as envisioned by Section 794 would be devastating. Our company would not be able to do business as a subcontractor with such guaranties and liabilities. The effect would be the loss of a significant part of our business and several hundred jobs. Such risks would effect not only our company but the entire industry in its ability to provide this Nation with military equipment. We ask you to repeal Section 794 during the Senate Armed Forces Services Committee hearing on February 28.

Thank you for your support,

G.B. WALKER,
Corporate Marketing Manager.

THE OLOFSSON CORP.
Lansing, MI, February 1984.

MARY ANN GILLEECE,
Pentagon, Washington DC:

The above act as written and construed by Senator Mark Andrews (R-ND) will place unreasonable written performance warranty requirements on all companies engaged in DOD contract assignments. This could be potentially ruinous to a subcontractor such as us and could have a devastating effect on DOD costs for any military item.

We urge you to work toward a repeal of those guarantee provisions and support industrys efforts to insure the most reasonable implementation of section 794 prior to the Senate Armed Service Committee hearing on February 28, 1984.

G.A. OLOFSSON, JR.

YOUNG RADIATOR CO.

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING, ACQUISITION MANAGEMENT
Pentagon, Room 2A330, Washington DC:

The details of DOD proposed guidelines to implement section 794 of the 1984 DOD appropriations act have been brought to our attention by our prime contractor, FMC Corporation, ordnance division. As a supplier of heat transfer components for the M2, M113A2, M548 and LVTP7 we are extremely concerned about the vagueness and scope of new guarantee requirements.

Contractors who must price extensive guarantees will now be considering undefined risks so that protected costs will have to increase significantly. Further, expecting a guarantee of a design which the government essentially owns and for which is a unilateral right to make changes is unrealistic.

Also, the guidelines are unclear as to the method of determination of claims under the guarantee.

We are concerned about the guarantee provisions in general but urge that you consider the foregoing comments in your final guidelines for implementation.

Respectfully submitted,

FRED M. YOUNG, JR.,
President.

ENPO PUMP CO.,
Piqa OH, February 1984.

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING
Washington, DC Acquisition Management, Room A330, the Pentagon:

I must express my feelings about Section 794 of the FY84 DOD Appropriations Agt. The section and act are not completely clear, but if I interpret them correctly

with the guaranty followup that will be required of all prime and subcontractors two very major things will happen.

1. Small companies such as our own cannot afford to obligate themselves to travel all over the world because a 12 lb. or 25 lb. pump has failed. All too often the failure is not with the pump but with improper handling of the pump and allowing foreign material to enter the impeller chamber plugging the pump.

2. Certainly every company that must or will accept the too tight guaranty in Section 794 must raise prices to offset possible large and unwieldy warranty costs.

In the best interest of the Nation and U.S. Government suppliers this section of the act must be eliminated or revised to something that suppliers and the government can live with.

The provisions of this Act I understand are to go into effect on March 14, 1984, and I suggest to save many small businesses and to save the U.S. Government money in the long run that this section be voided or cancelled.

R.O. BENJAMIN, *President.*

TELEDYNE INC
Los Angeles, CA, February 1984.

OFFICE OF THE DEPUTY UNDER SECRETARY OF DEFENSE RESEARCH AND ENGINEERING
Washington, DC, Acquisition Management Room 2A330.

Attn: Office of the Deputy Under Secretary of Defense.

Subject: Proposed guidelines for implementation of Section 794 of the 1984 DOD Appropriations Act

Teledyne believes the guarantee provisions contained in Sec. 794 has many adverse implications, not the least of which will be a significant increase in cost to the U.S. Government. The proposed guidelines leave many questions unanswered, such as contractor responsibility when spares are purchased from sources other than the equipment manufacturer. This, and other undefined risks, will serve only to increase costs rather than contain them.

We urge further consideration of these factors before implementing Sec. 794. In fact, if possible, we urge considering the repeal of this onerous section of the 1984 DOD Appropriations Act.

G.A. ROBERTS,
President.

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